ENGINEERING NEWS-RECORD

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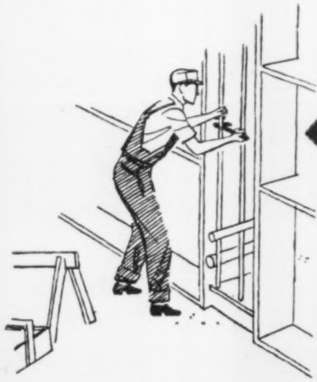
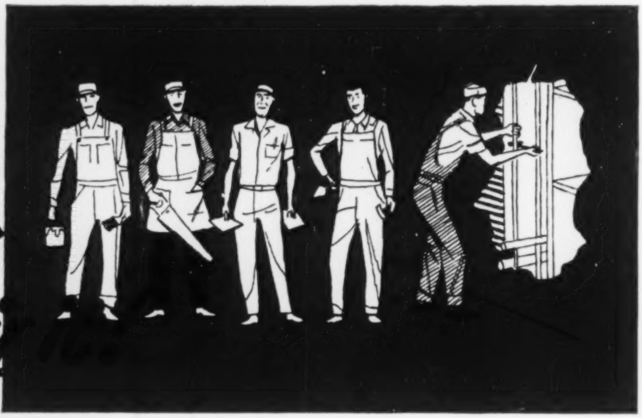


IT TAKES ONLY ONE

to install pipe



but FIVE

to repai

One of the most convincing demonstrations on the economy of using *durable* material is a repair job where low-first-cost material has failed—and is being replaced.

The original installation had been quickly made by pipe fitters. But the replacement calls for hours of work by as many as five crafts: pipe fitter, mason, plasterer, carpenter, painter. And this is only part of the cost story. The loss in production or utilization during the shut-down may amount to far more than the maintenance charge.

True, you pay a little more to *begin* with for Byers Wrought Iron pipe . . . but you pay a lot less to *end* with. In literally thousands of applications where corrosion costs you more than wrought iron, the use of this material is the soundest kind of economy move.

You will find a lot of helpful information on the control of excessive maintenance through the use of Byers Wrought Iron pipe in our technical bulletin, WROUGHT IRON FOR PIPING SYSTEMS. We will be glad to send you a copy.

A. M. Byers Company, Pittsburgh, Pa. Established 1864. Boston, New York, Philadelphia, Washington, Atlanta, Chicago, St. Louis, Houston, San Francisco, Export Division: New York, New York.

WHY WROUGHT IRON LASTS

This notch-fracture test specimen illustrates the unusual fibrous structure of wrought iron—which is responsible for the unusual corrosion resistance of the material. Tiny threads of glass-like silicate slag, distributed through the body of high-purity iron, halt and disperse corrosive attack, and discourage pitting and penetration. They also anchor the initial protective scale, which shields the underlying metal.

BYERS

CORROSION COSTS YOU MORE THAN WROUGHT IRON

WROUGHT IRON

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CONVEYOR BELT FOR DIAMOND MINE
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LOADING CHUTE
IMPACT IDLERS PROTECT BELT
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Reasons for this decision are:

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Berger Upsighting Collimator in use. Photo, courtesy U. S. Coast and Geodetic Survey

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Title..............................
Company..............................
Address..............................
City....................Zone....State......

ENGINEERING NEWS-RECORD

ABP Member ABC

Volume 148 MAY 8, 1952 No. 19

Waldo G. Bowman
Editor

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Robert F. Boger
Publisher

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SUCCESSFUL CONTRACTORS STAY SUCCESSFUL WITH PROVED EQUIPMENT!

NORTH WEST
CONTRACTORS

It's another

NORTHWEST

for
C. J. Langenfelder & Son, Inc.
Baltimore, Md.

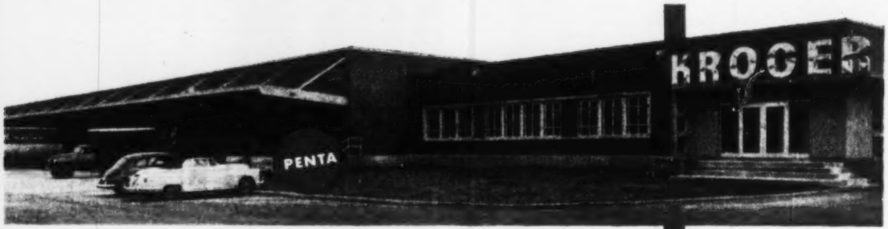
IF YOU have never used a Northwest it would be surprising if you have never wondered why, year after year, so many contractors have repeat ordered Northwest equipment.

Many of these Northwest owners have had experience with other makes of similar equipment—many of them have *owned* other similar equipment—but they always continue to buy Northwests.

C. J. Langenfelder & Son, Inc., Baltimore, Md., are contractors of long standing, well-known—successful. They can own any make of Shovel, Crane, Dragline or Pullshovel they want, but,—they have just put their 11th Northwest to work on another large job near Baltimore.

Northwest brings you dependability that keeps costs down. Northwest brings you a combination of advantages and a versatility found in no other similar piece of equipment. You are going to make plans for future purchases. Now is the time to learn about Northwest. Talk to Northwest users and then discuss your problem with a Northwest Sales Agent.

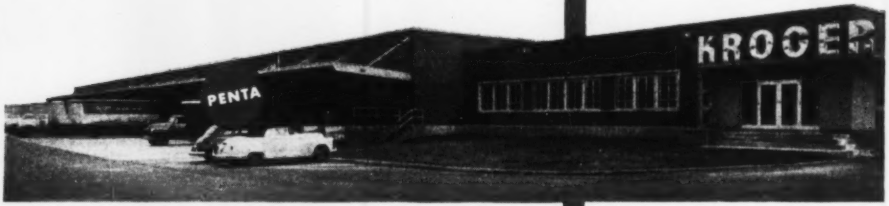
NORTHWEST ENGINEERING COMPANY
1502 Field Building, 135 South LaSalle Street, Chicago 3, Illinois



Penta preserves wood

PENTA
KROGER

in new Kroger building



Much of the wood used in the new Kroger office and warehouse in Nashville, Tennessee, is protected by Monsanto Penta preservative. Penta is used in all timbers of the loading dock bumper, in lumber around the perimeter of the roof and in the 8 x 8 buck timbers of the cold room.

Monsanto Penta protects lumber against attacks by termites and other wood-boring insects. It prevents decay caused by fungi. Monsanto Penta is a stable wood preservative. It does not leach. It does not wash away in rain or ground water. Properly formulated penta leaves wood clean, so it can be painted or finished by other methods.

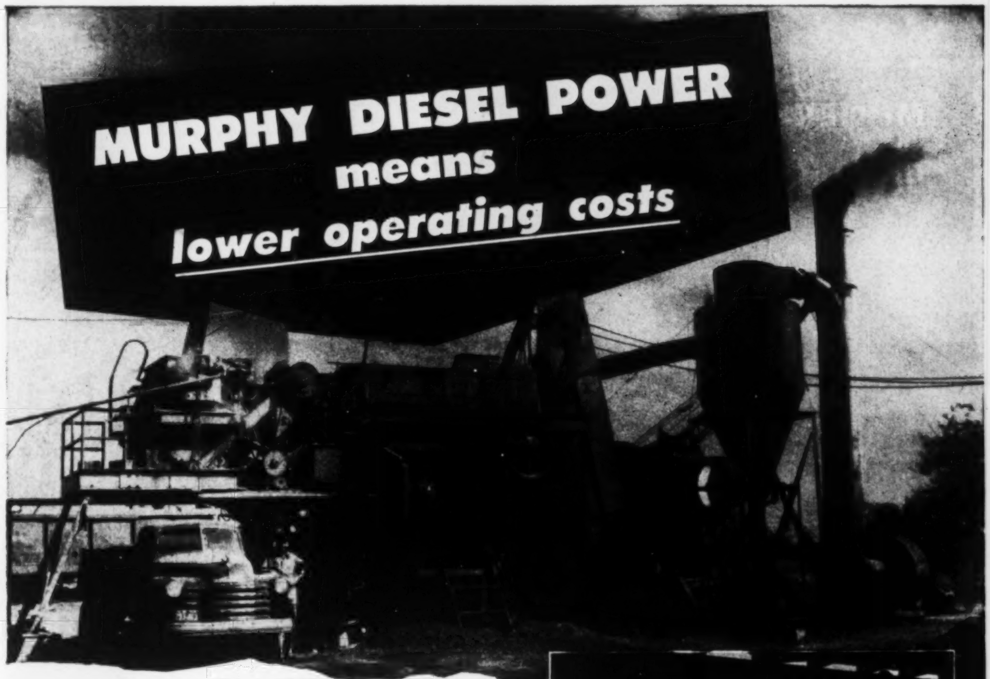
For information on the use of Monsanto Penta for preserving wood . . . for names of custom treaters . . . for a list of dealers who supply ready-treated wood . . . contact the nearest Monsanto Sales Office or write MONSANTO CHEMICAL COMPANY, Organic Chemicals Division, 1700 South Second Street, St. Louis 4, Mo.

PENTA

MONSANTO
CHEMICALS — PLASTICS

Serving Industry . . . Which Serves Mankind

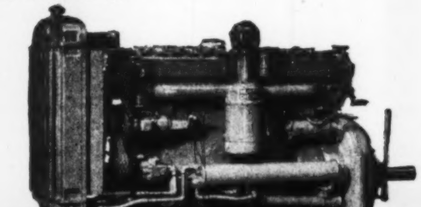
MURPHY DIESEL POWER
means
lower operating costs



MURPHY DIESEL'S ability to deliver more power . . . greater dependability . . . greater economy . . . and longer engine life means bigger profits for you on any kind of a job. Whether it's a crushing plant, a pump, a shovel, an air compressor, a hoist or a hot mix plant like the one shown above, Murphy Diesel Power will enable you to get the most out of your equipment.

Full details on why Murphy Diesels are able to give you all these operating advantages are given in the booklet "*10 Questions to Ask a Diesel Engine Salesman*". Ask your Murphy Diesel Dealer for a copy or write direct.

Shown above is a Cedarapids hot mix plant owned by Charles G. Gilmore Asphalt Products, Anna, Illinois. Electric power for the plant is supplied by the six cylinder Murphy Diesel Generator Set shown in the inset. When photographed the plant was being used in connection with paving U.S. 61 between Portageville and New Madrid, Missouri.



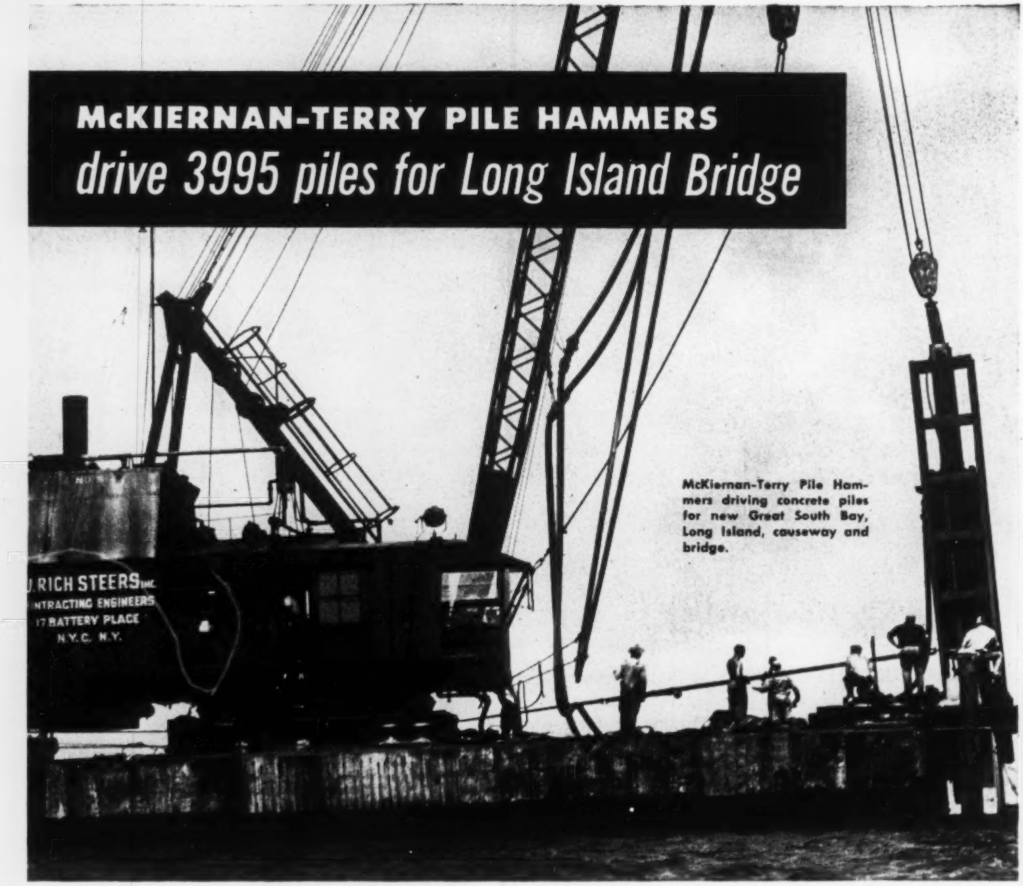
***Heavy Duty Power* for construction**

Murphy Diesel Engines and Power Units for construction, 90 to 226 H.P., 1200 and 1400 RPM. Generator Sets, 60 to 140 K.W.

MURPHY DIESEL

MURPHY DIESEL COMPANY
5311 W. Burnham St.
Milwaukee 14, Wisconsin
Sales, parts and service in principal centers

McKIERNAN-TERRY PILE HAMMERS
drive 3995 piles for Long Island Bridge



McKiernan-Terry Pile Hammers driving concrete piles for new Great South Bay, Long Island, causeway and bridge.

A new causeway and bridge, connecting Captree Island and Bay Shore, is currently being built across the Great South Bay in Long Island, New York. The contractor, J. Rich Steers, Inc., selected McKiernan-Terry Pile Hammers to drive a total of 3,995 concrete and timber piles for this project.

A powerful McKiernan-Terry S-10 Single-Acting Hammer was used to drive 697 2-ft square reinforced concrete piles and 148 18-in. square reinforced concrete piles. In addition, 3150 subaqueous timber piles were punched down with a fast-driving McKiernan-Terry 10-B-3 Double-Acting Hammer.

Chances are, wherever you find heavy construction . . . in building bridges, tunnels, subways, cofferdams highways, foundations, water-front improvements and many other jobs . . . you will find McKiernan-Terry equipment at work. Hundreds of contractors rely on the power and dependability of McKiernan-Terry pile hammers and extractors. Bulletin describes complete line, which includes 16 sizes of hammers and 2 sizes of extractors. Write for your copy today.

McKIERNAN TERRY

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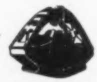
MEAD-MORRISON COAL AND ORE UNLOADERS AND BRIDGES
Available in a variety of designs and in capacities of 300 to 1500 tons per hour. Exceptional durability proven by installations in service for half a century. Simple controls afford convenient, comfortable and speedy operation.



GRAB BUCKETS
Range of types and sizes take bulk materials loads up to 25 tons. Ruggedness without excess weight.

HONING UP TO 42-IN. I.D. X 55-FT. LONG
Typical of the extensive facilities of McKiernan-Terry for unusual jobs.

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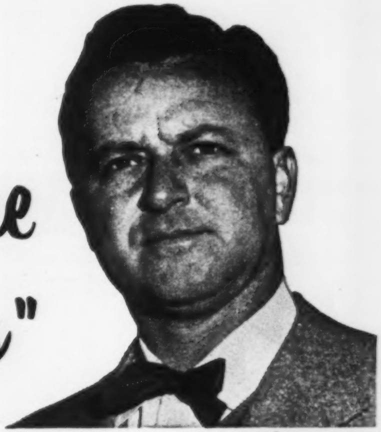
Plants: Harrison, New Jersey, and Dover, New Jersey

MK 316

"T5X has prolonged the time between overhauls"



says California contractor

CONSTRUCTION AHEAD
DRIVE
SLOW

For the past five years, the N & K Paving Company in Los Angeles has used T5X motor oil in all its trucks, motor patrols and skip loaders.

Mr. Peter R. Kisich, company owner, reports: "T5X has held my operating costs to a minimum and prolonged the time between overhauls. The fact that I need to carry only one oil for all my requirements has simplified my maintenance problems. I cannot speak too highly of this splendid all-purpose motor oil."

Heavy construction work demands that engines operate at varying speeds under continual heavy loads. These intermittent, power-demanding speeds often result in excessive engine wear and high maintenance costs. Construction men such as Peter Kisich rely on the superior lubricating ability of T5X to protect their engines under *all* operating conditions.

T5X—the amazing *purple* motor oil—is made from the finest base stocks that modern chemistry and present-day refinery equipment can produce. Special-purpose compounds have been added to these superior base stocks to give you an oil that is unexcelled in heavy-duty lubricating ability.

OFFICES

LOS ANGELES	NEW YORK	CHICAGO
Union Oil Building	4904 RCA Building	1612 Bankers Building

NEW ORLEANS, 917 National Bank of Commerce Building

Developed by the manufacturers of UNOBA—
the industry's original multi-purpose grease

76 UNION OIL COMPANY OF CALIFORNIA

KEEP 'EM MOVING
WITH A BAY CITY

207

CHECK THESE FEATURES

- √ Fully Convertible
- √ Long, Wide Crawlers
- √ Alloy Cast Bases
- √ Tandem Drums
- √ Power Booster Clutches
- √ High Line Speeds
- √ Wide Vision Cab
- √ Power Dipper Trip
- √ Pin-Connected Boom

This ¾-yard BAY CITY Dragline keeps trucks moving on a highway construction project in Louisiana. BAY CITY gives a good account of itself on all jobs, large or small, because it is a fine, powerful machine that will give you high daily production and continuous heavy duty operation. The simplified power and operating mechanism and the easily accessible machine assembly means unusually easy and inexpensive operation, maintenance and repair. The BAY CITY is readily convertible to shovel, dragline, clamshell, pile driver or hoe to meet all sorts of production requirements. Sizes to 1¼ yard with 25 ton crane capacity. See your dealer or write today for catalog. BAY CITY SHOVELS, INC., BAY CITY, MICHIGAN.

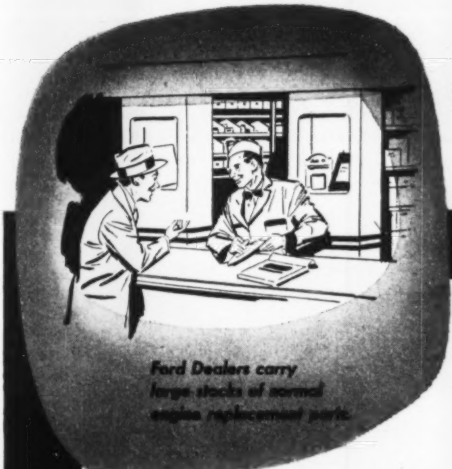
BAY CITY

SHOVELS • CRANES • HOES • DRAGLINES • CLAMSHELLS

Wherever You are...

PARTS and SERVICE are readily available for Ford

INDUSTRIAL ENGINES AND POWER UNITS



Ford Dealers carry large stocks of normal engine replacement parts.

● Ask any equipment builder what he has found to be increasingly important in selling his product. Or ask the actual operators of industrial powered machinery the things that most seriously affect profitable operation.

Both manufacturers and users will agree on these two points: **(1)** *Ready availability of replacement parts, and* **(2)** *Convenient service facilities.*

Nothing is more irritating to the operator of powered equipment than "downtime" lost in awaiting delivery of parts from some distant warehouse; or locating a good mechanic who knows all about the engine when service is sorely needed.

Equipment builders who specify Ford Industrial Engines or Power Units for their products automatically overcome this problem. And users who are replacing their worn-out engines with new Ford Power have also found this is the right answer.

Because . . . Ford Dealers are located virtually in every city, town and village. There are more than 6400 of them, PLUS independent shops everywhere that also carry Genuine Ford Parts. Wherever you are, Ford Parts and Service are "right around the corner." Yes, experience is fast proving that Ford Industrial Engines, built to Ford's famous high-precision standards, are—

M. R. BOW
PARTS & SERV

Quick service is as near as the local Ford Dealer.

RIGHT 3 WAYS for your job:

1—RIGHT POWER 2—RIGHT FEATURES
3—RIGHT SERVICE

6 GREAT ENGINES
designed and built for industrial use

Ford Industrial Engines are now offered in six series: One 4-cylinder, two 6-cylinder and three V-8 cylinder, ranging from 120 to 317 cu. in. displacement. All are available as complete power units or as individual engine assemblies. Write for descriptive literature on these engines and also the—

NEW FORD MULTA-TORQUE CONVERTER

YOUR JOB IS WELL-POWERED WHEN IT'S FORD-POWERED

Ford
INDUSTRIAL ENGINES
AND POWER UNITS

CLIP AND MAIL COUPON TODAY!

INDUSTRIAL ENGINE DEPARTMENT
FORD MOTOR COMPANY
15050 Woodward Ave., Highland Park 3, Mich.

We are interested in Industrial Power for:

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(state your application)

Send us 1952 literature on Ford Industrial Engines checked below:

☐ "120" 4-Cyl. ☐ "215" 6-Cyl. ☐ "239" V-8
☐ "254" 6-Cyl. ☐ "279" V-8 ☐ "317" V-8
☐ "MULTA-TORQUE" Converter

Firm Name______________________________
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Aluminum Co of America USES Borden Pressure Locked Gratings

floor gratings

- clean, durable, easy to paint and maintain
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- especially desirable boiler rooms and all dry areas

BORDEN METAL PRODUCTS CO.
ELIZABETH, N. J.
Southern Division — Leeds, Ala.
Main Plant — Union, N. J.

READER COMMENT

Stronger concrete roads

Sir: Discussions of the Maryland Test Road No. 1 (ENR Nov. 2, 1950, p. 25) show that a wheel load 18 in. from the edge of a concrete slab makes an edge deflection 30% less than does a load 6 in. from the edge. Under edge-loading conditions a fatigue failure is said to occur. Fatigue failure is hardly descriptive of the failure. An invisible localized failure of the subgrade, progressing into visible failure of the slab, seems better to describe the process of decay.

I suggest the following design to combat the situation: Before building the slab proper, dig a trench beneath the road edge. In this trench place a 6-in. thickness of concrete 30 in. wide. This concrete is to extend a foot outside the slab edge and 18 in. inside. While it is setting, put the slab header forms in place on it. Place bevel rubber strips inside the form, as shown in the drawing. These rubber strips will be out of the atmosphere, away from the sun, and will seal the water in spring and during rains, to prevent pumping.

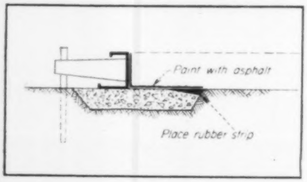


Figure the corner deflection with and without this edge-strengthening. The result might show the road's life to be an interesting inverse function of the amplitude of corner deflection.

My estimate of additional cost is $6500 per mile.

Glenway Maxon
Consulting engineer
Milwaukee, Wis.

Why class A for roof deck?

Sir: In the Official C.M.P. Class "B" Product List issued by N.P.A. for guidance during the second quarter of 1952, Steel Roof Deck is shown as Class "A", although it had always been previously classed as Class "B". In the Official Product List for the third quarter just issued, Steel Roof Deck has been placed back as Class "B".

When the second quarter list was issued, the Metal Roof Deck Institute protested the change from "B" to "A" classification and N.P.A. agreed to return it to Class "B" for the second quarter and further agreed to notify all concerned. Such notification, you will agree, would be quite a task and very difficult to cover completely and, since the list for the second quarter is still being used, the Metal Roof Deck Institute would appreciate any effort made by your publication to bring this correction to the notice of your readers.

We feel that putting roof deck under Class "A" would tend to cause designers to use material not in Class "A" due to the difficulty of obtaining Class "A" products and, therefore, work a hardship on our industry. The latest issue of "List of Materials and Alternates", Conservation Division of D.P.A., no longer considers steel sheets as critical.

Robert W. Gastmeyer
Metal Roof Deck Institute

Box girders show low cost

Sir: I have read Mr. Baxter's letter on the Walnut Lane Bridge (ENR Feb. 26, p. 12) with much interest. Assuredly the cost of the approach work and of the test beam should not now or at any time be included in the cost of this bridge. Deducting these charges there remains $567,600 for the cost of the bridge proper, or about $28.80 per sq ft.

The Duvall Bridge, cost of which was $10.02 per sq ft, is illustrated and described in detail in Civil Engineering Feb., 1952, p. 32.

The writer does not believe that narrowing and lengthening a bridge should give lower costs. On the contrary, he thinks the reverse is true. On the Duvall Bridge, where the river spans were built last, the contractor's superintendent found it necessary to ride a motorcycle to get speedily from one end of the job to the other.

Professor Holley's letter (ENR Mar. 27, p. 13) is most interesting. He is referred to the Civil Engineering article for further details regarding the Duvall Bridge, which he deems necessary for forming a reasonable judgment regarding the relative economy of the two constructions.

The basis of my question: "Why not keep the money and buy a second bridge?" was simply this: According to published figures the Walnut Lane Bridge cost $35.43 per sq ft. The Duvall Bridge, on the contrary, cost $10.02 per sq ft. Now, on the basis of corrected figures, the Walnut Lane Bridge cost $28.80 per

(*Continued on page 15*)

4 TL25 CRAWLERS

for any
BOOM • TRAVEL
GROUND CONDITION

In the Lorain TL25 "Series" you can match the crawler to ground or working conditions or type of job for more profitable operation. Don't penalize your turntable by putting it on a crawler that limits its production. Pick the one suited to your needs in the Lorain TL25 "Series" . . . the only ¾-yd. machine that offers you a selection of 4 crawlers. See your Thew-Lorain Distributor for facts.

STANDARD

TL25-J Crawler is suited for average job conditions—a good general purpose mounting for all booms. Length—10'0"; width—8'6". All TL25 crawlers provide two travel speeds in both directions.

EXTRA-LONG

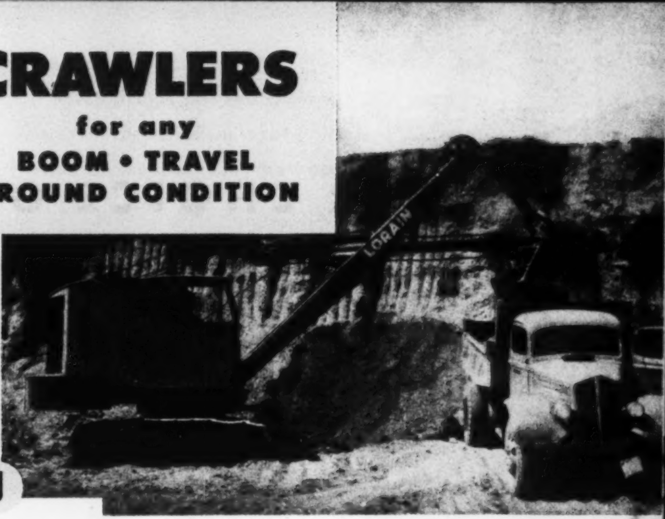
TL25-K Crawler is ideal for dragline, clamshell or crane use. 25% longer, it reduces ground pressures, improves soft-ground flotation, eliminates "nosing-in". Length — 12'6"; width—8'6"

EXTRA-WIDE

TL25-S Crawler is the answer for trenching and pipeline needs. Wide distance between treads enables crawler to straddle trench without cave-ins. Especially adaptable to hoe front end. Length—10'0"; width—11'8".

WIDER AND LONGER

TL25-KS Crawler is 12'6" long—11'8" wide. Provides the surest kind of footing, even in the softest going. Provides greater crane lifting capacities . . . all the advantages of both the "K" and the "S" crawlers.



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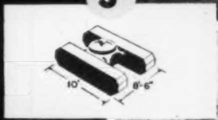

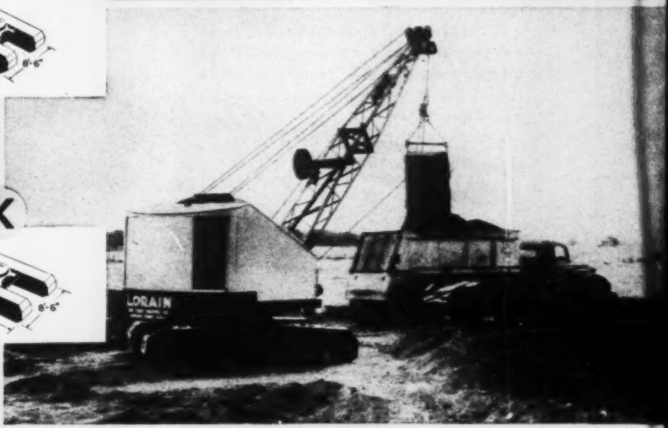

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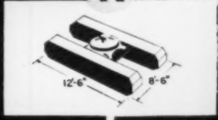

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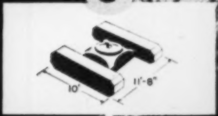

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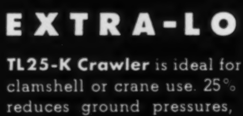
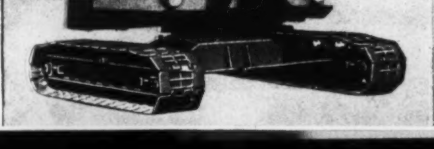




THE THEW LORAIN®

THE THEW SHOVEL CO., LORAIN, OHIO

YOUR CHOICE OF 3 GREAT B-TYPE SCRAPERS

(22 yd. struck, 27½ yd. heaped). Largest scraper in current production available for use with crawler tractors. Developed along with the International TD-24 tractor to fully apply its unusual working capacity.

(10 yd. struck, 14 yd. heaped). Engineered especially to work with the International TD-18A Tractor and make a matched dirt-moving team of championship caliber.

(16 yd. struck, 21 yd. heaped). Has greatest struck capacity of the scrapers loaded without pusher assistance. Designed as the companion to the TD-24 tractor — takes full advantage of its superior speed and power.

INTERNATIONAL DIESEL

Each of these three Bucyrus-Erie B-Type Scraper models loads with the same "fountain" action that breaks up chunks and boils material up through to fill the bowl completely.

Each hauls easily on big tires, and has the stability that comes with low bowl height, wide spaced rear wheels and proper weight distribution.

Each dumps fast and clean with the same positive *rolling* action—a type of ejection that requires less horsepower and thus permits dumping in higher tractor gear.

Each has the design refinements and strong construction throughout that mean extra ease of handling and servicing, extra yardage hauled, extra long life.

BUCYRUS ERIE

SOUTH MILWAUKEE, WISCONSIN

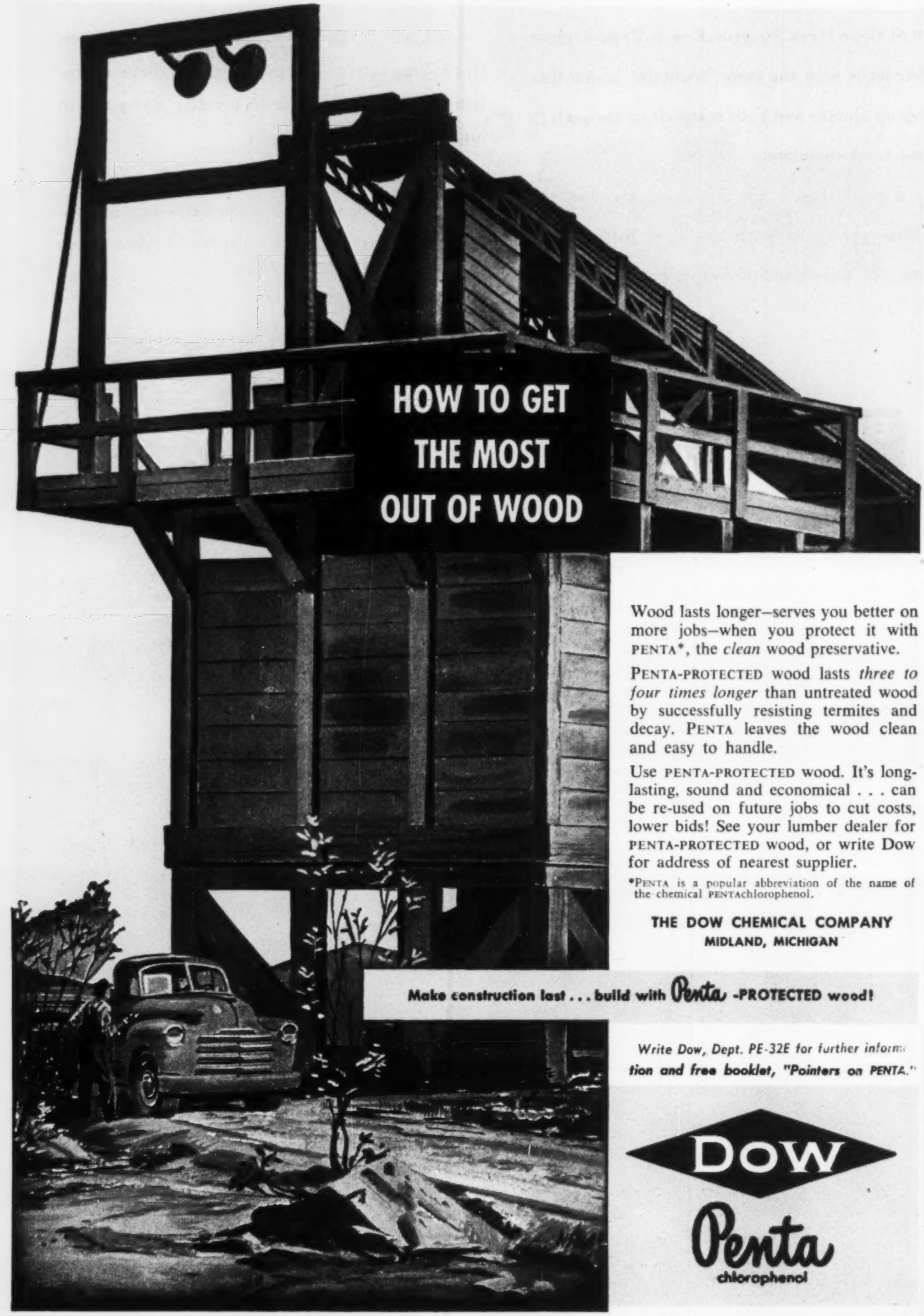
BIG RED TEAM

CONTINUES TO WIN ON PERFORMANCE

Time after time the Big Red Team — International TD-24 Tractor and Bucyrus-Erie B-250 or B-170A Scraper — comes out on top in actual field tests. It hauls more yards, loads and dumps faster, has shorter overall cycle time than comparable units. But why not find out for yourself? Ask your International Industrial Tractor Distributor for a demonstration.

B-250
BUCYRUS ERIE

8T52C



HOW TO GET THE MOST OUT OF WOOD

Wood lasts longer—serves you better on more jobs—when you protect it with PENTA*, the *clean* wood preservative.

PENTA-PROTECTED wood lasts *three to four times longer* than untreated wood by successfully resisting termites and decay. PENTA leaves the wood clean and easy to handle.

Use PENTA-PROTECTED wood. It's long-lasting, sound and economical . . . can be re-used on future jobs to cut costs, lower bids! See your lumber dealer for PENTA-PROTECTED wood, or write Dow for address of nearest supplier.

*PENTA is a popular abbreviation of the name of the chemical PENTAchlorophenol.

THE DOW CHEMICAL COMPANY
MIDLAND, MICHIGAN

Make construction last . . . build with Penta -PROTECTED wood!

Write Dow, Dept. PE-32E for further inform tion and free booklet, "Pointers on PENTA."

DOW

Penta
chlorophenol

(Continued from page 10)

sq ft vs Duvall's $10.02 per sq ft. Therefore, the question is repeated. Why Professor Holley, knowing full well what the unit-cost figures were that I had used, should elect to state in his letter that I claimed the cost of the Walnut Lane Bridge was merely "greater" than that of a box girder bridge, etc., I do not know. I assume it was done for candor and fair understanding.

All the virtues and advantages of prestressed concrete are summarized and condensed in its cost per square foot. All the virtues and advantages of some other concrete construction are summarized and condensed in its cost per square foot. Giving due recognition to the fact that costs vary in different parts of the country, the writer would suggest that since cost differences of this order of magnitude have arisen, it would not be amiss to devote the next MIT conference to concrete box girders.

HOMER M. HADLEY
Consulting Engineer
Seattle, Wash.

Correction

Sir: In ENR March 13, p. 58 you have published a very good summation of the paper on load transmission which I delivered at the January meeting of the Highway Research Board. I hope that you will not consider me ungrateful for calling attention to one minor error. In using the weakest set of subgrade springs, the subgrade pressure corresponding to one inch of spring deflection is equal to 82 lb per square inch rather than 350 lb as stated in the article. This is due to the fact that the load on each spring is distributed over a little more than four square inches of the subgrade area.

In the load transmission project we are trying very hard to obtain factual information which will give us a better idea of the structural action of flexible pavement materials. We fully realize the complexity and magnitude of this undertaking and hope that engineers from other organizations will be encouraged to offer their suggestions and constructive criticism on the project. Reference to this project in a publication such as the "News-Record" should serve to advertise the work to many engineers who otherwise would not know of the project. I, therefore, feel that your article will be very helpful to us and I wish to express my appreciation for the excellent job of summarizing the paper.

RAYMOND C. HERNER,
Chief Airport Division,
Civil Aeronautics Administration,
Indianapolis, Ind.

How Much Does *Instant Communication* Mean To Your Business?

Control On the Dashboard—On black-topping, fill and sewer work, plus sand and gravel operation, General Electric radio system cut Steven Kravec's travel time in 3 counties by 50%.

RUNS 8 JOBS WITH G-E 2-WAY RADIO

WITH no increase in personnel or equipment, a New York State hauling contractor has upped his work output by 25% in one year. Steven Kravec of Syracuse, employing one G-E mobile radio unit in his car, one in a service truck and one at his office, has cut his net cost per job in half. He controls as many as 8 jobs at one time literally from the front seat of his car.

● **New Angle on Time-Saving**—Kravec leaves his home at 6 AM and drives directly to job sites, talking by radio to his office on the way. This saves him 1½ hours of work time each morning. Equipment breakdowns on the job are handled quickly with repair instructions relayed by radio.

● **Pays For Itself**—His complete G-E radio system cost Kravec less than $2500. He reports it paid for itself in the first 3 months, has been a profit-maker ever since. Information on this and other types of industrial radio may be obtained from the Communications Man in the G-E office near you. Mail coupon below for *free* bulletins.

43
STEVEN KRAVEC
Trucking
PHONE
SYRACUSE

Diverts Trucks In Emergency—Caught on the road by radio message, trucks hauled 15 loads in one hour to shore up a sewer job cave-in. Quick action saved contractor at least $500.

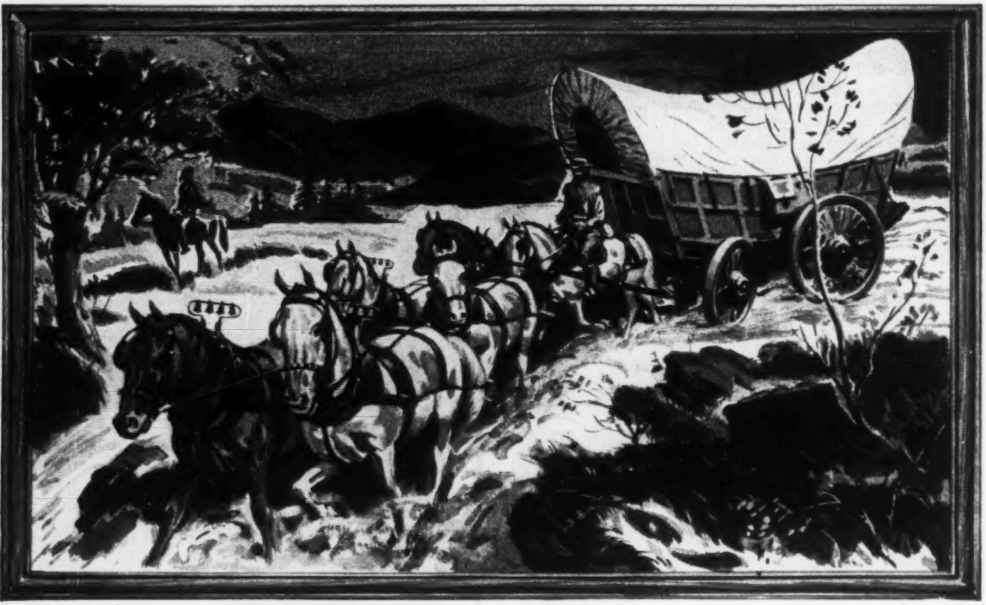
Speeds Change Orders—If ready-mix plant 15 miles away wants #1 instead of #2 stone, order is flashed in seconds to radio car at pit. Time saved: 2 hours for travel and loading.

General Electric Company, Section 2252-8
Electronics Park, Syracuse, New York

Please send me free literature on G-E 2-way radio for industry.

Name..
Type of Business..
Address..
City.. State..

GENERAL ELECTRIC



Conestoga Wagons had POWER STEERING... Why not Modern Trucks?

Thousands of these sturdy wide-wheel wagons carried freight between the Atlantic Coast and Pittsburgh, the gateway to the "Ohio country", in the 1830's and 40's. The driver rode the left wheel horse and did not steer by muscle power. He signalled the left lead horse with a single rein . . . shouted "gee" and "haw". If a wheel hit an obstruction or a softer spot than usual, the horsepower took care of it . . . not the driver's back and shoulders. Flat tire trouble was eliminated by having them all flat (iron) in the first place.

The ordinary modern motor truck is far superior to the Conestoga in every way except steering. In eliminating the 6-horse teams with jingling bells, we have loaded the work of steering on the driver himself. Without power steering he has to expend physical effort that at times would have daunted even the rough and ready Conestoga men. Drivers tire, slow down, become less efficient . . . more prone to have accidents.

When equipped with Vickers Hydraulic Power Steering, the heaviest truck can be steered under even the most adverse conditions (ruts, soft shoulders, flat tires, etc.) with only a light finger touch on the steering wheel. Drivers remain fresh, efficient, safe. Get additional information by asking for Bulletin M-5100.

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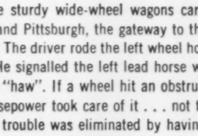
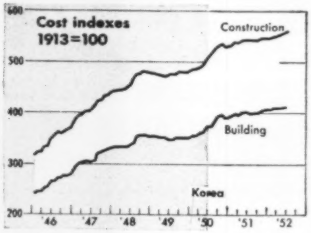
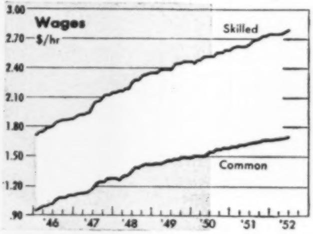


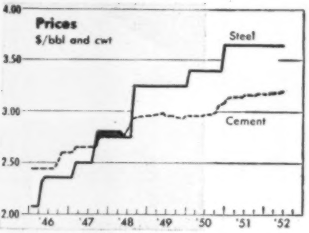
VICKERS hydraulic
POWER STEERING
Is Effortless, Positive and Shockless

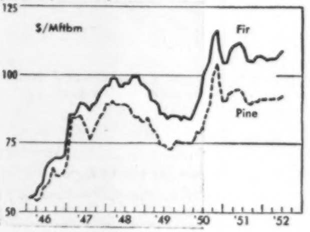
4700

MAY CONSTRUCTION SCOREBOARD









ENR INDEXES (1913 = 100), 20-cities' average	1952 May	% Change from last Month	% Change from last Year
Construction Cost	557.11	+0.5	+2.6
Building Cost	410.36	+0.6	+2.3

WAGE RATES, 20-cities' average			
Common	$1.690	+0.6	+5.1
Skilled (aver. 3 trades)	2.797	+0.7	+6.4
Bricklayers	3.140	+1.2	+8.3
Structural Ironworkers	2.727	+0.6	+5.6
Carpenters	2.524	+0.5	+4.8

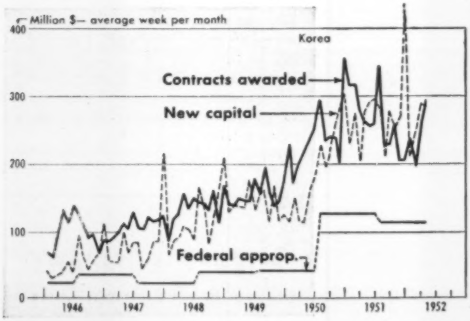
MATERIAL PRICES, 20-cities' average			
Cement, bulk, per bbl	$3.186	+0.2	+1.0
Structural Steel, (3-mill aver.), per cwt	3.650	0.0	0.0
Sand, per ton	2.106	0.0	+0.6
Lumber, 2x4 Fir, per M. ft. bm	108.930	+0.9	−2.4
Lumber, 2x4 Pine, per M. ft. bm	92.300	+0.9	−3.2
Common brick, per M	31.271	0.0	−0.01
Ready-mixed concrete, per c. y	10.909	0.0	+0.08
Structural Clay Tile, 3x12x12 per M	151.288	−0.0	5.1

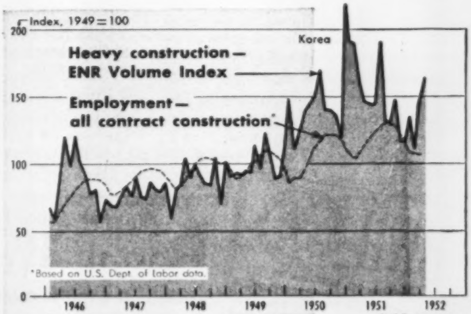
CONTRACTS AWARDED (Millions)	1952 Apr.	1952 4-Mos.	% Chg. from '51 Apr.	% Chg. from '51 4-Mos.
Total U. S. (ENR reported)	$1,180	$4,208	+13.1	−15.6
Private	586	2,272	+6.8	−25.5
Public	594	1,936	+20.1	−0.2
Federal	187	622	−18.7	−18.5
ENR Volume Index, '13 = 100	568	483†	+11.6	−18.9

NEW CAPITAL (Millions)				
Total	$687	$2,421	+16.1	−46.9
State & Municipal Bond Sales	363	1,019	+22.5	−5.4
Corporate Security Sales	296	1,314	− 0.1	+42.5
Federal (non-federal work)	29	88	......	+19.3
Federal (federal work)	....	......	......	......

MATERIAL SHIPMENTS & LABOR SUPPLY (Millions)	1952 Feb.(F) Mar.(M)	1952 2-Mos.(2) 3-Mos.(3)	% Chg. from '51 Mo.	% Chg. from '51 Yr.-Cum.
Cement, bbls, Bu. of Mines	14.362(F)	27.058(2)	+27.1	+14.9
Fabr. Struc. Steel, tons, AISC	0.271(M)	0.761(3)	+14.3	+17.9
Lumber, mil, ft. bm., NLMA	2.950(F)	5.794(2)	+ 2.3	− 4.7
Lumber Prod., mil. ft. bm., NLMA.	2.870(F)	5.568(2)	+ 3.9	− 3.4
Contract Constr. Employ., BLS	2.289(M)	2.301†(3)	− 1.6	+ 1.0

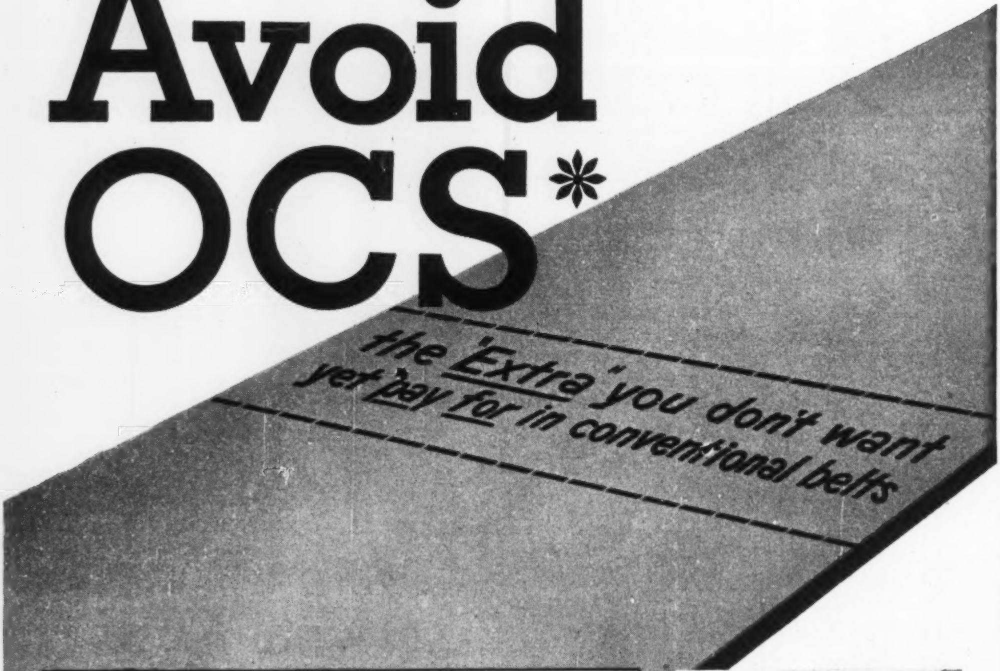
† Average



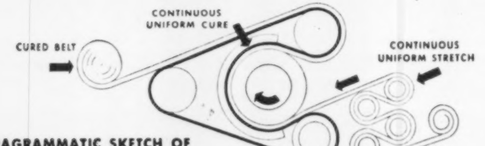


ENR Business News

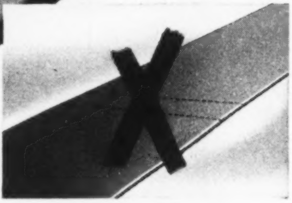
Avoid OCS*


the "Extra" you don't want
yet pay for in conventional belts

Rotocure eliminates this cause of conveyor belt failure



DIAGRAMMATIC SKETCH OF
EXCLUSIVE ROTOCURE PROCESS



***Overcured Sections — present every 30' to 40' in all belts made by the flat press method.**

When you buy a conveyor belt, your money entitles you to a belt *uniformly cured throughout.* But you don't get it, you *can't get it* with belts made by conventional flat press methods!

Here's what happens in flat press curing: belt segments every 30 to 40 feet are overcured because of press overlaps – sections cured earlier advance *less than a full press length.* The "double treatment" results in a series of weakened structures about 2" to 4" wide. They're "breakdown breeders."

You won't find these Achilles heels in BWH *ROTOCURED* CONVEYOR BELTS! They're made by continuous, constant-motion curing. Every inch of the belt receives a uniform, *single* curing. Every inch of the belt is *uniformly strong.*

BWH Rotocured Belts cut the cost per ton of material conveyed because they pay off with the following:

1. **Increased belt life (up to 40%)**
2. **Elimination of mechanical distortion at the press ends**
3. **Constant, uniform stretch**
4. **Uniform, abrasion-resistant covers**

Get the complete story from your BWH distributor who knows a good thing when he sees it – for *you.* Ask him also about BWH Transmission Belts – another cost-cutter because they permit operation at lower tension and belts last longer.

BWH
DEPENDABLE RUGGEDNESS

Another Quality Product of
BOSTON WOVEN HOSE & RUBBER COMPANY
Warehouse Stock: 111 N. Canal St., Chicago, Illinois **Distributors in all Principal Cities**
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THE CONSTRUCTION WEEK

MOROCCO—The contractors on the Moroccan air bases, Atlas Constructors, are going to get the hearing this week that they demanded from Senator Lyndon Johnson's Investigating Committee which heard the other side of the story from sundry witnesses. The hearings are scheduled to begin Wednesday. Since the hearings were recessed, the contractors have answered all of the charges in detail in a 6-lb report delivered to the Under-Secretary of the Army. Many of the most sensational charges will be called untrue; others will be shown to have been exaggerated. A fairer and more accurate picture of the North African construction work should emerge.

IMPROVISED CANAL—As flood waters poured into Salt Lake City, Utah, city engineers had to contrive a hasty spillway last week. Before the flood started they draglined and cleared the Jordan River, the Surplus Canal and the old Goggin Drain. The flooding occurred due to the inadequacy of the enclosed storm drains which bisect the gently sloping city. These drains follow the path of "dry" stream beds which gave evidence of flooding in the past. Sewer-encased Parleys Creek and Emigration Creek burst out of their manhole covers. It was then that the engineers turned 13th South Street into a canal with sandbag dikes. Fifty blocks went under water and a million dollars in damage occurred. The street-canal is being kept and strengthened in preparation for more floods.

STYMIED—The $30-million trunk sewer project planned to clean up New Jersey's highly polluted Raritan River is at least temporarily balked. Required numbers of municipal and industrial pollutors failed to sign as participants by the May 1 deadline. And until financial support can be secured it's no project. Recalcitrants face State Health Department action which is expected shortly. Negotiations will continue. Major industries failing to sign: Du Pont, Johns-Manville, American Cyanamid.

WATER DISPUTE BOILS—The Supreme Court last week gave New Mexico 60 days to answer charges by Texas that New Mexico has been violating a Rio Grande compact signed in 1938 to provide for distribution of water between Texas, New Mexico, and Colorado. It authorized the State of Texas to seek an injunction against New Mexico to insure that Texas gets its share of water from the Rio Grande.

For cost and volume index see page 121.

DON'T WORRY ABOUT STEEL YET—Last week's interruption in steel production resulted in losses of over 1.5 million ingot tons. Coupled with the first walkout, nearly 2.5 million ingot tons of output has been lost. But so far there is no indication these losses have upset NPA allotment schedules, and they are not expected to have any devastating impact on construction (ENR Apr. 10, p. 23).

IN THIS ISSUE—Military construction plans for 1953 (p. 21) . . . Battle over contract award for public works rages (p. 22) . . . Bureau of Reclamation observes 50th birthday (p. 24) . . . Labor leader hits strikes over work assignments (p. 29) . . . Rain ends severe southwestern drought (p. 36) . . . Tidewater Virginia linked by bridge over York River (p. 50) . . . Flotation system wants a crack at sewage treatment (p. 55) . . . Parking garages are getting more mechanized (p. 59) . . . Bridge expansion joints made with flame cutter (p. 67) . . . Near East adds 300,000 bbl of oil a day to world's supply (p. 68) . . . Huber nominated for presidency of ASCE (p. 80) . . . Contractors seek changes in renegotiation rules (p. 116) . . . Editorials (p. 144).

Better for paving work

Less mixing water is needed for a given slump in concrete made with Duraplastic air-entraining portland cement. The result is a more workable, more uniform and more plastic concrete that dumps, spreads and finishes easily. And it allows earlier protection for curing.

Makes more durable concrete

Duraplastic cement minimizes segregation and bleeding. Thus, concrete is fortified against the destructive effects of freezing-thawing weather and the scaling action of de-icing salts. (Penn-Lincoln Parkway, Allegheny Co., Pa. Duraplastic paving, bridges, underpasses and Atlas White Duraplastic used in white concrete reflecting median dividers. Designed by Pennsylvania Department of Highways. Contractor: Johnson, Drake & Piper, N. Y. Curb by Polselli and Angelucci, Philadelphia.

YET DURAPLASTIC* COSTS NO MORE

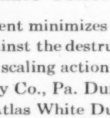
It sells at the same price as regular cement and requires no unusual changes in procedure. Complies with ASTM and Federal Specifications. For descriptive booklet, write Universal Atlas Cement Company (United States Steel Corporation Subsidiary), 100 Park Avenue, New York 17, N. Y.

**"Duraplastic" is the registered trade mark of the air-entraining portland cement manufactured by Universal Atlas Cement Company.*

ATLAS® **DURAPLASTIC**

AIR-ENTRAINING PORTLAND CEMENT

Makes Better Concrete at No Extra Cost



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"THE THEATRE GUILD ON THE AIR"—*Sponsored by U. S. Steel Subsidiaries—Sunday Evenings—NBC Network*

ENR-D-124RR

$3-billion authorization asked for defense projects

- **Largest share planned for Air Force construction**
- **Part would pay for participation in NATO pact**
- **Economy attacks anticipated in Congress**

The Department of Defense last week sent Congress its estimates on military public works for the 1953 fiscal year. It came to $2 billion in direct project authorization—the lion's share of which again goes to the Air Force.

But in addition to asking for project authorization, the bill calls for another $1 billion that the Secretary of Defense can use to pay for common use facilities for the defense of Western Europe. This would represent the U. S. share of these costs, as agreed at the Lisbon meeting of NATO nations in February. Also included was other secret foreign base construction work which can be authorized by the Secretary of Defense.

The package comes to about $.5 billion less than what the military has already contracted for since Korea. And, it's about $2 billion under the $5.8 billion authorized last year in PL-155. Congress ultimately voted $2.9 billion for military construction last year which split this way: $2.1 billion Air Force; $1 billion Army; and $800 million for the Navy.

Major projects listed

Among the major air base projects scheduled for construction in the U. S.:

Hammonton Air Force Base, Hammonton, N. J., $73.5 million; Patrick AFB, Cocoa, Fla., $40.0 million; Plattsburg Municipal Airport, Plattsburg, N. Y., $36.2 million; Tye Field AFB, Abilene, Tex., $32.2 million; Homestead-Dade County Airport, Homestead, Fla., $31.5 million; Little Rock AFB, Little Rock, Ark., $31.1 million; Sioux City Municipal Airport, Sioux City, Iowa, $29.0 million; Bunker Hill Naval Air Station, Peru, Ind., $24.7 million; Westover AFB, Chicopee Falls, Mass., $24.3 million.

The Army plans call for 60 new construction projects in continental installations. Some of the major are: Redstone Arsenal, Huntsville, Alabama, $6.5 million Fort Ord, Monterey, California, $7.8 million; Fort Benning, Columbus, Georgia, $5.7 million; Fort Benjamin Harrison, Indianapolis, Indiana, $7.6 million; Fort Knox, Louisville, Ky., $17 million; Camp Detrick, Frederick, Md., $17 million; Fort Monmouth, Red Bank, N. J., $8.6 million; White Sands Proving Ground, Las Cruces, New Mexico, $82 million; Fort Terry, New York, $5.4 million; Fort Bragg, Fayetteville, N. C., $15 million; and, Fort Hood, Killeen, Texas, $10.5 million.

Some of the principal Naval construction projects planned are: Marine barracks, Camp Pendleton, Oceanside, Cal., $16.2 million; Marine Corps supply depot, Albany, Ga., $14.4 million; Naval supply center, Byron, Ga., $11 million; Naval Shipyard, Boston, $4 million; Naval Shipyard, Brooklyn, $6 million; Naval supply depot, Scotia, N. Y., $3.6 million; Naval base, Newport, R. I., $5 million; Naval Shipyard, Charleston, S. C., $7.3 million; Naval base, Norfolk, $5.4 million; and, the naval hospital at Norfolk, $12.6 million.

Fight in prospect

There's not much defense planners could do about it, but the request for added construction funds comes to Congress at a bad time. The House has already skimmed about $5 billion off the regular military appropriations for next year and Pentagon chiefs are now making a last ditch stand for restoration of funds in the Senate. Chances are that the new construction authorization request will come up for some real cutting.

Actually, requests for new funds shouldn't be compared with previous authorizations or appropriations. Reason is that most construction funds are "no year appropriations" which means that they are good until expended. Unlike other types of appropriations, they do not expire at the end of the fiscal year. Authorizations for construction approved by Congress last year were for an entirely different set of projects. So far this year the military has let only about $15 billion in construction contracts already approved.

The thing to remember about the current $3-billion program is that the Defense Department is asking Congress to authorize projects that will ultimately cost that much. Defense officials will have to submit another request to get the money—appropriations—at a later date. This request is usually for less than the total authorization, but includes funds that pay for some work in progress.

Just when the Pentagon will ask for appropriations is not sure right now. But chances are that if Congress postpones action on the appropriation request until authorizations are acted on, the Defense Department won't get 1953 construction funds until late this year—or even next year.

Here's how the construction program would be divided among the three services: (thousands of dollars)

	Inside U. S.	Outside U. S. (Includes Alaska)	Classified Projects	Total
Army	$178,809	68,617	26,310	273,736
Navy	174,044	34,839	28,972	237,855
AF	859,991	139,099	517,071	1,516,161
Grand Total				$2,027,752

Classified projects—mostly secret work like radar nets etc.—can be both inside the U. S. as well as abroad.

MILITARY PUBLIC WORKS AUTHORIZATIONS
(In Millions)

State	Army	Navy	Air Force	Total
Alabama	7.4	.09	23.0	*30.5
Arizona	3.1	...	14.4	17.5
Arkansas	.4	...	47.3	47.8
California	11.2	36.3	19.8	67.5
Delaware	...	...	2.6	2.6
Florida	...	5.0	121.1	126.1
Georgia	6.9	25.5	9.3	41.8
Idaho	...	...	15.2	15.2
Illinois	...	3.3	5.8	9.1
Indiana	7.9	...	24.7	32.6
Iowa	...	...	29.0	29.0
Kansas	.3	...	31.7	32.0
Kentucky	22.0	...	1.1	23.1
Louisiana	.6	...	47.4	48.0
Maine	...	...	34.0	34.0
Maryland	28.2	9.9	1.6	39.8
Mass.	3.7	3.9	37.4	45.1
Michigan	2.5	...	2.8	5.3
Minnesota	...	...	1.2	1.2
Nebraska	...	...	9.9	9.9
Nevada	...	...	7.8	7.8
New Hampshire	...	.3	...	.3
New Jersey	14.9	1.1	73.5	89.6
New Mexico	8.2	...	16.0	24.2
New York	7.1	9.9	46.4	63.5
North Carolina	15.3	.4	28.6	44.3
Ohio	...	...	16.4	16.4
Oklahoma	4.3	...	28.0	32.4
Oregon	...	...	.9	.9
Pennsylvania	1.8	3.3	1.2	6.4
Rhode Island	...	7.8	...	7.8
South Carolina	.1	11.6	9.2	21.0
South Dakota	...	...	3.1	3.1
Tennessee	...	...	13.3	13.3
Texas	15.5	...	152.9	168.4
Utah	.8	...	1.7	2.6
Vermont	...	...	.6	.6
Virginia	7.2	25.1	...	32.4
Washington	1.7	3.7	30.7	36.2
Washington, D. C.	1.5	.5	.7	2.7
Wisconsin	...	...	1.5	1.5

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* All figures except totals in round figures.

In favor:

Harold E. McGregor (left), president of the Heating, Piping and Air Conditioning Contractors National Association, and Charles M. Moseley (right), vice president of the National Electrical Contractors Association — fired opening guns in support.

Opposed:

H. E. Foreman (left), managing director; and A. S. Horner, president; and Glen W. Maxon, former president (right), of the Associated General Contractors —will lead opposition.

Congress to hear fight over move to

What may prove to be a long and bitter struggle opened last week as the Senate Judiciary Subcommittee started hearings on legislation to change contract practice on federal public works.

The bill (S. 2907) is sponsored by Senators John J. Sparkman, and Homer Ferguson. It would:

1. Require general contractors to farm out to subcontractors on a low-bid basis certain specialty work on government contracts including electrical, heating, and plumbing work—unless they are equipped and qualified to do the work themselves;

2. Prohibit the shaving down of subcontract figures unless the contractor passes along the saving to the government.

It would exempt: contracts outside the continental U. S.; contracts involving an overall cost of $25,000 or less; subcontracts of less than $5,000; and projects where "public exigency will not admit of the incident delay."

On its face, the measure is aimed at the high ideal of savings for the public purse, and elimination of various practices in letting of subcontracts that are at least unfair, if not strictly illegal. But under the surface, the provisions of the bill could work drastic changes in the entire construction industry; and there are valid arguments that they would not be advantageous—either to the public or industry. Both specialty contractors and prime contractors are girded for grim battle.

I. In favor:

As the hearings opened last week, specialty contractors had their inning. Their testimony ranged over the full list of complaints they have against the existing practice—as well as advantages they believe will result if the practice is changed. They argue:

- There's too much "bid chiseling" by the general contractors—asking subs for quotes on a job before the general bids it in, then playing one against another to cut the price still further after the job is assured.

Charles W. Moseley, vice president of the National Electrical Contractors Association, declared that bid-shopping on federal jobs is so extreme it is driving out reputable and well established specialty contractors.

- There are too many "pets"—a list of subcontractors who always do work for certain general contractors, to the exclusion of other subcontractors. This is coupled with a practice of seldom telling a subcontractor why his tender has been rejected.

H. E. McGregor, president of the Heating, Piping and Air Conditioning Contractors National Association, cited a Massachusetts law requiring separate notices for general and specialty contract bids. He said the law is so well liked by general contractors that they fight any effort to change it.

- Faulty workmanship and waste sometimes result when general contractors undertake specialty work. Paul M. Geary, executive vice president of the NECA, said the first section of the bill would save the government money by preventing non-qualified contractors from doing specialty work.

II. Opposed:

"The 33rd annual convention of the Associated General Contractors of America . . . reaffirms its previous recommendations to public and private bodies which award construction contracts that the maximum value is secured when one general contract for construction of a project is awarded to a competent general contractor and undivided responsibility is placed upon that organization."

This recent AGC resolution, indicates the position of most general contractors in and out of the associa-

Here are key parts of

On cost-plus-fixed-fee contracts—

1) Before any government agency can award a contract it must estimate the cost of the mechanical specialty work needed.

2) Each class of specialty work must be performed by a specialty subcontractor or by a qualified general contractor. Before any specialty work is begun, the name of the subcontractor or the general contractor doing the job must be submitted to the agency letting contract.

3) The general contractor may do the specialty work himself if he can prove to the contract awarding agency that he is qualified to do it.

On lump-sum contracts—

1) Before awarding a contract, the agency must: (a) Estimate the cost of each class of specialty work, (b) make plans and specifications for each type of specialty work, (c) receive from the general contractor the name and low bid of each specialty subcontractor engaged to perform the work.

2) A general contractor may perform

Growth of Membersh
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anuary

change federal contract practice

tion. Through last weekend, they had not presented their case to the subcommittee. But when their inning comes, they will build their opposition around these points:

- There would be no real saving to the public under provisions of the bill. Subcontractors bidding independently are likely to bid higher than they would bid or quote to a general contractor on the same work. Public works officials seldom have the intimate knowledge of construction to enable them to detect high bids.

the proposed measure

specialty work himself, if he can prove that he is qualified, and if he specifies specialty work will do and how much it will cost.

3) A general contractor cannot award any work to a specialty subcontractor unless the subcontractor meets all the foregoing conditions.

4) If a specialty subcontractor cannot, or will not, live up to the terms of the contract, then the general contractor can obtain a substitute, provided he first submits the name and contract price of the substitute to the government agency.

5) A general contractor can switch to a substitute subcontractor with a lower bid if: (a) He reports to the agency, and receives approval; (b) if the original subcontractor was chosen from a list of specialty contractors answering a bid advertisement, then the substitute must have been one of the list.

6) If the general contractor does substitute subcontractors for a lower price, the total contract price will be lowered by the full net difference in the cost.

- The provisions would do nothing to assure that subcontractors are capable; and more importantly, that they are willing and able to work with other contractors and the general contractor on the job.

One of the qualifications any general contractor looks for in subcontractors is the type of men he employs—up through his engineering and supervisory staffs. There is no search for qualifications such as these provided in the bill.

- The general contractor would have no control over the subcontractors on the same jobs, therefore contracts will take longer to complete.

- Independent contracts would increase the supervisory and paper work necessary on the part of the contracting agency; it has not one, but many contracts to sign; and not one but many individual contractors to deal with.

III. Contracting party

The third party to the public works contracts dispute is the contracting agency. Those representing contracting agencies who have testified, so far, have been against the bill. They were W. E. Reynolds, commissioner of public buildings, representing the General Services Administration; and Maj. Gen. G. J. Nold, deputy chief of engineers of the U. S. Army Corps of Engineers, representing the Defense Department.

Both witnesses said that the bill would increase the administrative costs of the government. They also said the bill would create more trouble than it would eliminate.

IV. Precedents

The controversy is just now making its debut in the federal public works picture; but it has been kicking around for a long time in various states.

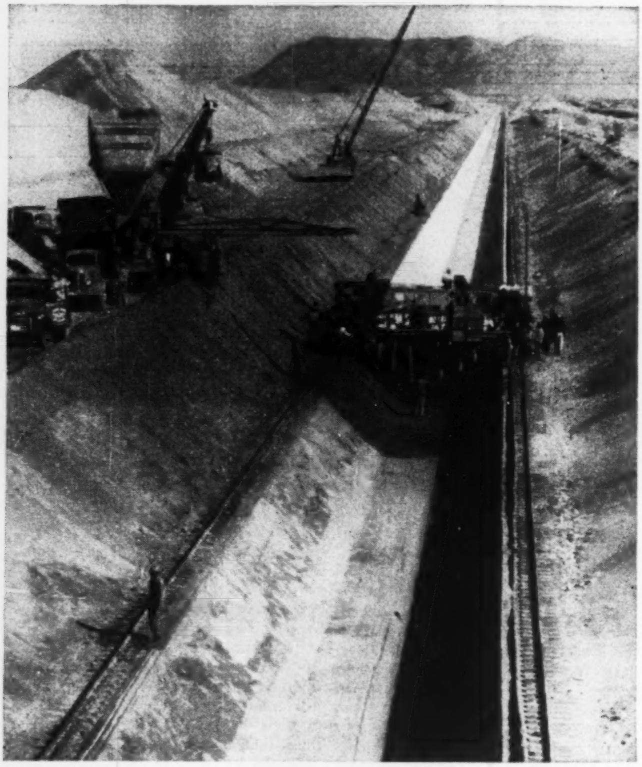
New York State, for example, has had such a law in effect for more than 25 years. The most recent version was published in 1940. Under it state and local governmental subdivision such as school districts, are compelled to take separate bids on certain mechanical trades subcontracts—then let contracts to the lowest sub-bidder.

Pennsylvania, New Jersey, Ohio, North Carolina, and Arkansas have laws that basically are similar, but different in detail.

In all of these states, general contractors have been, and for the most part still are, opposed to the laws. They say it is costing the states more money and unnecessarily prolonging construction. Subcontractors cite these states as examples of the "progressive system of separation of mechanical from general contracts."

In Pennsylvania, where a separate contract law has been on the books since 1913, public officials and big contractors do not like it. Attempts to repeal it have always been stymied by subcontractors and by labor unions.

In Ohio, the Director of Public Works is opposed to the law. The state tried to have the law amended in 1951, but failed. Similar legislation has been defeated in the past few years in Louisiana, Connecticut and Georgia; and pends in Massachusetts.



ON A CANAL LINING OPERATION, a Morrison-Knudsen Co., Inc. crew helps complete the Gila Project, planned to turn raw desert into farmland.

Reclamation throws a birthday party

Thirsty Arizona deserts got a fresh drink of water last week as the Bureau of Reclamation's Commissioner Michael W. Straus flipped the switch turning the first water into the Wellton-Mohawk Division of the Bureau's Gila Reclamation Project.

It was part of a four-day observance, as officials honored the Golden Jubilee of Reclamation with song and pageant in addition to ceremonies at project sites. The Arizona celebration was the first in a chain of observances scheduled throughout the summer in the West to honor the bureau's 50th birthday.

Undersecretary of the Interior Richard D. Searles opened the Reclamation birthday party when he placed the first of two new 82,500 kw generators on the line at Hoover Dam. Also joining in opening day festivities, Commissioner Straus predicted that Hoover Dam would this year hold back one of the greatest runoffs in the history of the Colorado River. Instead of the critical flood threat offered by the often-rampaging Colorado River, Pacific Southwest residents will get "millions more killowatt hours of energy and ample water for late season irrigation."

The next day, the Commissioner gave the official nod which marked the start of irrigation on 75,000 ac of desert in Gila's Wellton-Mohawk Division. Together with the completed Yuma Mesa Division, the new Wellton-Mohawk project will irrigate some 115,000 ac in the Arizona desert.

• **New system**—Under construction since 1949, the new system consists of three main canals, three major pumping plants and two smaller pumping stations. The Wellton-Mohawk Canal, 18½ mi long, leaves the Gila gravity main canal in the Yuma Mesa Division just below the Gila River siphon, about 15 mi below Imperial Dam. Two branches, the Wellton and Mohawk canals, convey water to their respective lateral systems. Major contracts, totaling over $11 million, went to United Concrete Pipe Corp., Western Contracting Corp.; Morrison-Knudsen Co., Inc.; Marshall, Haas & Royce; Macco Corp. and Fisher Contracting Co.

The final two days of Arizona's observance centered around the Salt River Project near Phoenix where some 3,000 Arizonans presented a special pageant for the occasion. Party-goers also listened to a four movement suite written for the jubilee by composer Ferde Grofe.

• **Other celebrations**—Other Western states were not overlooking commemoration of the 1902 Reclamation Act which, according to Straus, reclaimed more than 125,000 prosperous family-sized farms from useless sagebrush land. As the million-ac Columbia Basin and Colorado-Big Thompson Projects near completion, more fertile land is in the offing—adding not only to the nation's productivity but providing an increasingly rich market for goods and services.

Heralding a week-long celebration at Grand Coulee Dam the final week in May, first day cancellations of the official jubilee postage stamp portraying the mammoth Columbia River Dam will take place in the town of Grand Coulee, May 15.

During the Central Washington Celebration, water will be pumped from the Columbia for the first gravity flow irrigation. Later in the week, an 80-ac irrigated farm complete with house and equipment will be carved in a day from the sagebrush-covered land on the project. Donated by the people of the Basin without cost to the government, the farm will go to World War II veteran Donald D. Dun who last year was flooded out of his Kansas home.

• **Project to open**—June 17, actual anniversary of the Reclamation Act's passage, will see the first integrated operation of the Colorado-Big Thompson Project, a 13-mi tunnel which diverts water from the western to the eastern slope of the Rockies.

And as more states announced plans honoring federal cooperation in the development of the West's water resources, Secretary of the Interior Oscar L. Chapman noted:

"In the fifty years since the Federal Government adopted a policy of participation with the people of the West in putting their rivers to work, works have been constructed which are supplying water to more than 6 million acres of land. From these acres, crops valued at more than $600 million were taken last year."

NPA revises rules on aluminum orders

Aluminum producers can now book orders 25% above authorized production schedules set by the National Production Authority. This will permit them to acquire order backlogs and will ease the effects of cancellation.

It will also assure more complete utilization of aluminum production capacity.

The producers, who have been calling for relief from the stringent controls (ENR May 1, p. 22), previously were authorized to accept orders only up to 100% of their production directives. Last week's amendment to NPA order M-5 raises the level of acceptance to 125%.

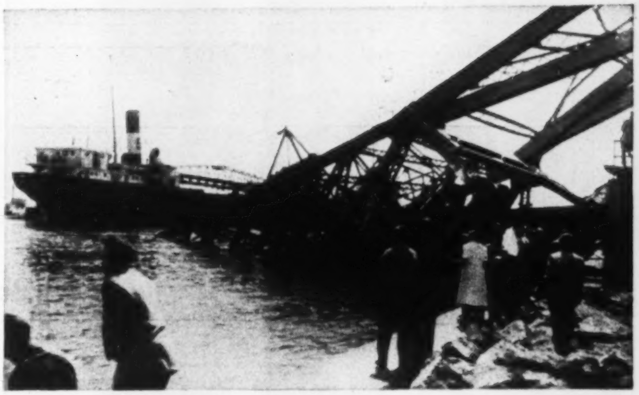
Three other changes in the order which had been urged on NPA by the Prime Aluminum Products Industry Advisory were not made in the revised schedule. They had been asked to give the industry greater flexibility in meeting changes in the supply-demand picture. Aluminum producers say controls are, in some cases, hurting production schedules.

Golden Gate Bridge Board named for new studies

Membership of a consulting board to study means of strengthening the Golden Gate Bridge (ENR Feb. 7, p. 27) has been completed with the appointment of O. H. Ammann, New York, and Chas. E. Andrew, Tacoma, Wash. These consulting engineers will serve with Clifford E. Paine, previously appointed by the bridge board of directors to direct the work. Paine will receive $30,000, Ammann $20,000 and Andrew $17,500 for the work. Their report will probably be completed early next year.

San Francisco papers recently carried mention of a report prepared by George Vincent, Bureau of Public Roads expert in aerodynamics of bridges, and George Whittle, consulting engineer, on the Dec. 1, 1951, motion of the bridge. The Vincent-Whittle Report, only in the draft stage, is being made to the Suspension Bridge Advisory Board sponsored by the Bureau of Public Roads with membership representing technical societies and institutions.

It is understood that this report strongly recommends wind tunnel studies. Conjecture is that a similar conclusion will be reached by Paine-Ammann-Andrew Board. In such case the work will undoubtedly be carried out at the University of Washington structural research laboratory since facilities for such work exist there. Meanwhile, no actual changes will be made on the bridge.



Freighter rams lift bridge

Struck by the 7,000-ton Great Lakes sand freighter W. E. Fitzgerald, the north span of a two-section lift bridge at Hamilton Bay Harbor, Lake Ontario, was knocked 40 ft out of alignment and crashed with a rumble into the channel last week.

The wreckage closed the channel to ship traffic. Highway traffic over the vital link in the Queen Elizabeth dual express highway connecting Toronto with Niagara Falls was diverted through Hamilton.

Bridgemaster Bert Hockridge stated the north span of the double leaf through truss bascule, refused to rise when he threw the switch to open it for the freighter. He immediately opened the south span, but the freighter was already in the channel. The ship dropped anchor and was almost stopped when it glided into the bridge span. There were no casualties from the accident.

The Ontario Government promptly announced its decision to build a new highway bridge as soon as steel is available. Expected to take two years to construct, it will be 100 ft high to allow ships to pass beneath.

Cause of the accident is being investigated by Federal Canadian Government officials under whose jurisdiction the bridge operates. Col. V. S. Thompson, one of Canada's top bridge experts, was rushed from Ottawa to make a report to the government on wreckage removal. He said it will take several weeks at least to clear wreckage and might require dynamiting.

Public housing controversy flares

Los Angeles' battle of public housing has taken a new turn with a California State Supreme Court ruling that the city council was out of bounds when it voted last December to cancel the city's contract with the Los Angeles Housing Authority for a 10,000-unit, $110-million project (ENR Jan. 10, p. 25).

The court said that the council used up its discretionary power when it voted to bring the City Housing Authority into operation, and that it cannot now go back on its prior approval. It issued a writ of mandate directing the city to carry out the terms of its contract with the local housing authority.

Reaction of anti-public housing councilmen was prompt and vociferous. A resolution was introduced and passed by an 8-6 vote, directing the City Attorney's office to petition for a rehearing, and if necessary to carry the case to the U. S. Supreme Court.

At stormy sessions featuring a near fist fight between two opposing members, Councilman Ed J. Davenport introduced a new idea—a resolution asking the Federal Public Housing Administrator to enter into an agreement with the city for both parties to abide by the citizenry's vote on the issue in primary elections June 3. The resolution was referred to committee, but council passage seemed assured.

So far, the housing question remains on the ballot even though under the court ruling the vote will have no effect.

When the issue came to a boil last December, the City Attorney's office told the council that it could end the contract under an amendment to the Independent Offices Appropriation Act which allows cities, in certain instances, to withdraw from housing programs. In petitioning for a rehearing, it will contend that the court skirted this issue.

FILMING BEGINS ON THE "FALLBROOK STORY." A Beverly Hills producer, in sympathy with the Fallbrook residents, has voluntarily started shooting a 30-min documentary film that will portray the local farmer's plight. (Wide World photo)

Crisis nears in fight over water

A federal district court in California last week set July 8 as the opening day of what may well become one of the longest and most important pieces of water right litigation since California achieved statehood.

The suit is an attempt by the U.S. government to get title to water rights it claims it owns on California's Santa Margarita River in the Fallbrook area of San Diego county. It has been filed against the Fallbrook Public Utility District and the Santa Margarita Water Company—the two largest users in the area.

But it may eventually involve literally thousands of defendants—in fact almost every family living in an area miles long and miles wide drawing on the river for water supply and irrigation.

In Washington a move to circumvent the suit is under way. The House Rules Committee cleared for House consideration, a bill to construct a dam on the Santa Margarita River, near San Diego.

The bill, approved by the House Insular Affairs Committee, is an attempt at partial solution at Fallbrook. Rep. Clair Engle of California, spokesman for the bill, said he could see no way to include a lawsuit ban in the bill, but he and other members of the California House delegation would confer with the legislative counsel of the House on a possible method to do it.

• New base is key—Key and start of the whole controversy is the Navy's huge Camp Joseph R. Pendleton Marine base, sprawling along the Pacific ocean about midway between San Diego and Los Angeles.

The Navy Department claims in complaints filed in federal district court, that when it purchased the land for the camp in World War II, it also purchased heavy holdings of Santa Margarita water rights that went with the land.

Acting for the Navy, the Department of Justice has served legal orders on thousands of residents of the town of Fallbrook and the surrounding countryside who purchase water from the Fallbrook PUD, as well as farmer-users of river water.

The Justice department has taken the brunt of indignation meetings and local and national news medium—most of whom have taken the view (along with an apparent majority of the local residents) that the move is a "water grab" and an attempt to assert a doctrine of federal sovereignty that would wipe out state water control laws in West.

The Navy itself has attempted to keep out of the increasingly bitter Fallbook fight.

• Navy position—But the Navy did issue one rather lengthy statement of its position, denying that it sought to deprive any landowner of his rightful water privileges, but saying that "many persons who are not entitled to water" have diverted from the stream in "substantial quantities."

In acquiring the lands in 1942 and 1943) from the old Rancho Santa Margarita, the Navy said it obtained water rights obtained by the ranch in a lawsuit that lasted from 1926 to 1940—and which gave the ranch property the right to two-thirds of the flow of the river.

The river, added the Navy, is the sole source of water supply to Camp Pendleton and the camp's hospital.

• And the courts—The trial now scheduled is being pressed against the two corporate defendants under a previous court ruling that such separation of the case would not prejudice the case against the other defendants. Both the PUD and the water company had opposed the separation on the ground that such action would place an unfair burden of expense on them, and that other defendants would undoubtedly be affected by the outcome of the case.

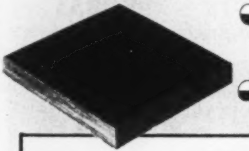
Bridge near The Dalles may cross at new site

Wasco County, Ore., has applied to the Corps of Engineers for approval of plans and location of a bridge across the Columbia River 2 mi. east of The Dalles, and downstream from the site of a bridge on which work was started but abandoned because of conflict with The Dalles Dam, now under construction (ENR Feb. 28, p. 26).

The new site will require an expenditure of approximately $1 million more than the original site. The county has taken the additional cost, but the Corps of Engineers contends that, since the bridge had not been completed, it has legal authority to pay for only the completed portion. The county's application was made with the expectation that a settlement would be reached.

Meanwhile, Tudor Engineering Co., San Francisco, is completing plans for the new bridge. Steel which had been fabricated for the original project by Judson-Pacific Murphy will be utilized in the new design. The Guy F. Atkinson Co. had the contract for and had started work on the old site, constructing piers and building roadways.

Plans for the new span call for a fixed structure crossing at right angles to the existing ship channel. Clearance for navigation would be 566 ft horizontally at the lower entrance to The Dalles Dam locks channel.



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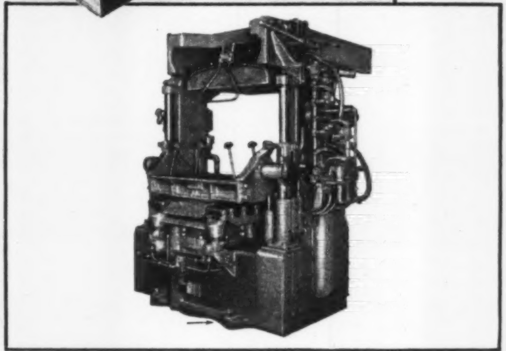

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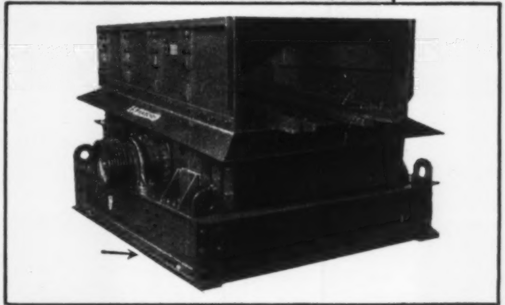
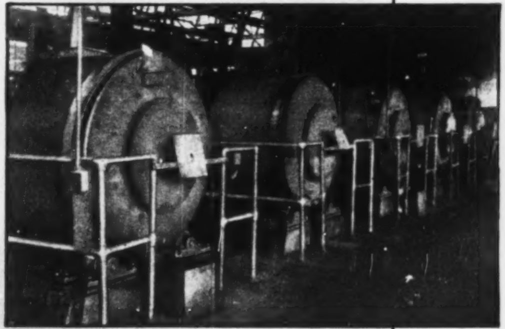


SHAKEOUT MACHINES



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"NO PICKETING of a job is permitted for settlement of jurisdictional disputes," says Joseph D. Keenan. (ENR photos by Compton)

Jurisdictional strikes blasted by AFL leader

"Strikes over jurisdictional disputes are all wrong," says Joseph D. Keenan, amplifying the statements he made last week (ENR May 1, p. 29) in Springfield, Ill.

Keenan, secretary-treasurer of AFL Building and Construction Trades Department, told ENGINEERING NEWS-RECORD that he and Richard J. Gray, president of the department, were in constant touch with the heads of the international unions in an effort to keep the mounting wave of disputes from drowning the industry.

"We've got a national joint board to settle this sort of dispute, and we are going to use it," he said.

"There is not supposed to be a single jurisdictional strike in our industry," Keenan added.

Strike picture

All over the country a rising wave of strikes and lockouts has been flooding in on the construction industry. Many of these strikes are due to the jurisdictional dispute between trades claiming a particular type of work as theirs.

It is not uncommon for a small group of men to walk off the job in a dispute of this nature and set up a picket line immediately. The picket line usually disrupts the progress of the job since the other trades respect it.

Keenan was strongly opposed to the use of the picket line in a jurisdictional dispute. While the men should not strike at all over a jurisdictional dispute, they were doing even worse in setting up an illegal picket line.

The situation is leading to a lot of inter-union bitterness and to a lot of ill-will on the part of the employers.

"When times were not so good," Keenan continued, "the unions were all for one and one for all. Now that they have been relatively prosperous for a number of years, they are

(Continued on next page)

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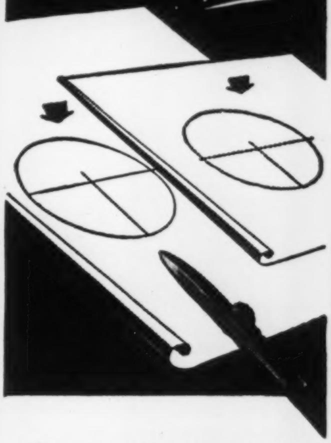

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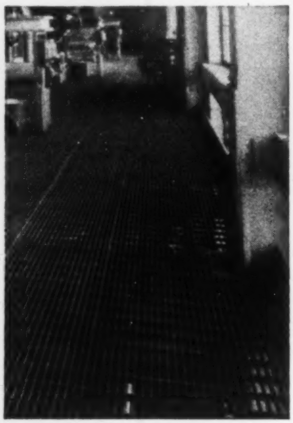

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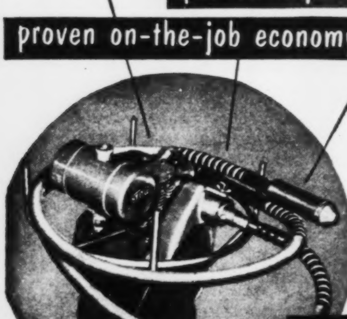

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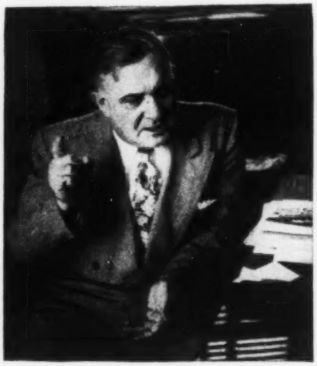


"It's up to the contractors to assign the job, but they've been ducking it."

squabbling among themselves."

"The time has come," he said, "when they have to stop."

Placing the blame

- **Employers**—Keenan believes that the fundamental cause of jurisdictional strikes is the dodging of responsibility by the contractor-employer.

Instead of exercising the right of selecting a trade to do a job, the employer allows the union business agents to "sell" him on one or another trade to do a disputed type of work. Keenan was scornful of this evasion of duty. "It is the employer who must select the trade in the light of local conditions and practice and then if his choice is disputed we can settle the argument," he said.

- **Unions**—In accepting the blame for some unions which have been striking against all the adopted rules of the building trades department, Keenan analyzed the basic causes:
- The construction worker has taken

The steps up . . .

Born in Chicago in November 1896 Joseph D. Keenan's first job, at the age of 18, was as an apprentice electrical worker. Four years later, in 1918, he advanced to journeyman and in 1926 became secretary of Electrician's Local 134. In 1937, Keenan was named secretary of AFL's Chicago Council. During the war years, he served as labor advisor to Sidney Hillman, Donald W. Nelson and later, to Gen. Lucius Clay in Germany. He was named to his present post—secretary-treasurer of the Building and Construction Trades Council—in 1951.

"New responsibilities . . . wife . . . kids . . . house . . . car . . . and it's good."

on—like the rest of the country—many responsibilities. This is especially true of the young veteran worker in the trades. Among his responsibilities he may have a house mortgaged, a car mortgaged, and wife and children not mortgaged but the reason for the other debts. In this position he cannot afford many days without work.

- The locals are getting bigger all the time. New members have been added and new locals started. Many of these locals are "empire building."

All this puts pressure on the business agents of the locals to find work and bid for all types of work for their members.

The formerly haughty mechanics now do not disdain jobs like loading and unloading materials (of their trades). In fact many of them claim it as their jurisdictional right. Strikes have been called to gain for some locals the right to unload materials delivered to the job.

- **Other reasons**—Besides the two basic reasons for jurisdictional disputes, these reasons also underlie the problem:
- Many new materials without historical connection with any trade have been brought into the field.
- The "boomer" construction man moving into new areas sometimes does not understand the customs of the new area and causes trouble. "The boomer," Keenan remarked, "always comes from a place where they do everything better than the place he is at."

Meanwhile the strike picture darkened as restless construction labor men halted work to enforce wage demands and welfare demands. Impatience led to . . .

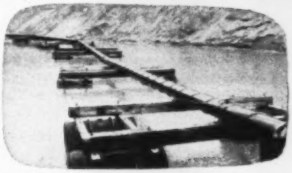
- **Strike in New Orleans**
- **Strike in Cleveland**
- **Strike in San Francisco . . .**

- New Orleans—Last week 12,000 out

(*Continued on next page*)

CONSTRUCTIVE SUGGESTIONS

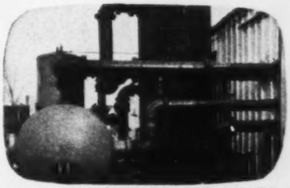
Typical Ways in Which
NAYLOR Light-weight PIPE
Serves Contractors



DREDGING

WATER LINES

VENTILATING PIPE



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Sure, and to get more rapid action on construction jobs, there's no pile hammer like Super-Vulcan. Delivering double the number of regular blows per minute, this mighty hammer moves from pile to pile quicker, enables you to drive more piles per dollar. It uses 25 to 35 per cent less steam than the single-acting type of hammer, is easy to operate, and has parts exposed for quick lubrication and maintenance. Yes, Super-Vulcan's many time-saving features help you complete jobs fast. It puts you way out front on time schedules, allows you to pocket substantial savings. And for extra economy, the open-type fits the same leads and uses the same accessories as the Vulcan Single-Acting hammer.

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VULCAN IRON WORKS
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Chicago 12 . . . Illinois

of 15,000 members of the AFL Building and Construction Trades Council struck to enforce wage demands against New Orleans contractors. The contractors had rejected wage increases previously approved by the WSB.

Negotiations had been proceeding for the past month. But the unions had been operating under a 25-month "peace pact" which expired April 30.

It was estimated that work would be stopped on some 200 projects in the city.

- **Cleveland**—Construction work in the Cleveland area started slowing to an eventual complete stop as building material drivers struck last week.

The strike became effective when employers refused to grant the drivers a 13¢ hourly increase and an additional 7½¢ for a welfare and health program. Employers offered 10¢ per hour for wages only.

The work stoppage has halted delivery of all building material except lumber which is delivered by another local union's members.

- **San Francisco**—The end of the fifth week in the San Francisco Bay area's AFL carpenter strike found the two sides deadlocked with no new negotiations.

A four-week-old AFL pile driver's strike was still in force, too, but a threatened laborers' strike hung fire, with workers involved in wildcat strikes through the northern California area going back to work after a week's idleness.

All are asking for the 15¢ hourly wage increase and the 7½¢ in welfare benefits allowed by CISC.

Contractors have offered the 15¢ increase effective when the strikers return to the job. They maintain that a welfare plan for the construction industry, where employment is largely transient, is "untimely."

Law change proposed by Labor Committee

Without a dissenting vote, the Senate Labor Committee approved the bill to exempt the construction industry from election requirements of the Taft-Hartley labor law and to make the union shop legal in construction even in the score of states which prohibit it through state right-to-work laws.

The bill—S. 1973—is not expected to get through Congress. Its main sponsors were Sens. Taft and Humphrey. The bill could pass the Senate easily. Opinion on Capitol Hill is that it could not get through the House Labor Committee.

Settling disputes

Here are some of the rules of the National Joint Board for Settlement of Jurisdictional Disputes:

CONTRACTOR SHALL—

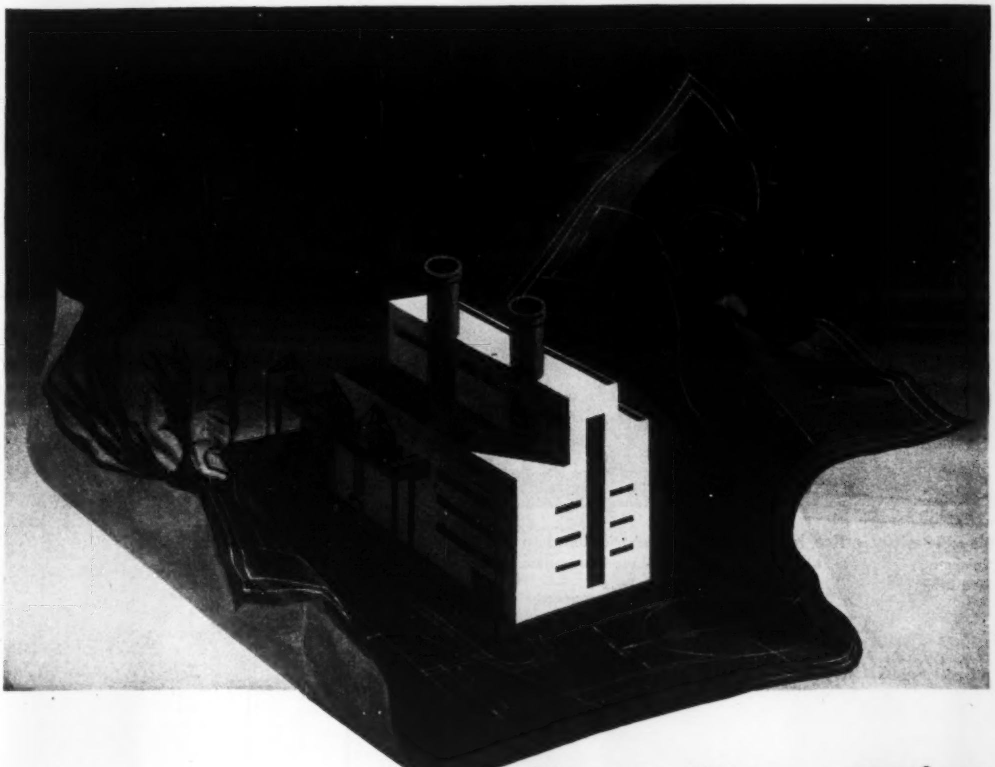
- **Make a specific assignment of the disputed work. It is a violation to shut down a project.**
- **Assign work according to agreements and decisions of record (Green Book).**
- **If there is no agreement or decision, then assign work in accord with established practice in the area.**
- **If there is no agreement and no established practice, then assign work after consulting trades representatives and local contractor associations.**

UNION SHALL—

- **Not stop work in any jurisdictional dispute.**
- **When a contractor has made a specific work assignment, all unions shall remain at work.**
- **File with the joint board any protest against a work assignment.**
- **Comply with decisions of the joint board.**

- **Objections**—Many members of Congress from states with right-to-work laws don't relish suspending those laws to permit the union shop for construction workers.
- Construction contractors don't like having the Taft-Hartley 30-day probationary period shortened to seven days in construction.
- The AFL Building Trades Dept. didn't like some amendments made in the bill by the subcommittee to satisfy CIO objections (ENR Mar. 20, p. 42). Whether the AFL building trades will support the bill as it now stands will be decided at the Executive Council meeting at Boston May 14-16.

- **Bill as written**—As approved by the committee, S. 1973 covers employers "primarily" engaged in building and construction. It permits contractors to sign union shop agreements with building trades unions before work begins, but other unions could later challenge the bargaining rights of the contracting union through a decertification poll. Workers could be made to join the union after seven, instead of 30, days on a job. Where commerce is affected, anti-union shop laws in a score of states could not stand in the way of a union shop in the construction industry.



How to Wrap a Project to Deliver Plus Performance

Maybe you're on one of those jobs now —where an "X" in equipment can hold out on the performance you're shooting for.

In a recent flood control project for example, vital discharge capacity had to be maintained under corrosive conditions. Specifications called for long life and provision for inspection and repair of seals, concrete and other vital parts to assure performance under peak loads.

A tandem gate system with 13 service and 13 emergency gates solved the problem. Emergency gates, located up-stream from service gates, could be closed to isolate service gates for inspection and repair. Seals designed for maximum performance were carefully machined for full bearing contact. And to resist corrosion and assure long equipment life, gate frames, gate leaves and conduit liners were fabricated of low-cost stainless-clad steel. Conventionally made leaves of corrosion-resistant material would have been exorbitant. Result: assurance that gates could be kept operable for flood peaks, plus corrosion resistance and assurance of long equipment life.

Does your project face a performance "X"? Resourceful designs like these come from the engineering staffs of progressive Equipment Builders—builders whose policy is working closely with leading designers, engineers and materials suppliers. For its knowledge of materials and its wide range of low-cost clad steels, such builders turn to Lukens regularly.

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Texas construction firm by setting

New 18-story office building for the Prudential Insurance Company of America, where Straus-Frank Co. used Remington Stud Drivers for fastening air ducts to concrete ceilings.

It's fast, easy and safe to operate the Remington Stud Driver

Simply hand-assemble stud and power cartridge, load as a unit in easy-to-open Remington Stud Driver, and close.

Press loaded Stud Driver firmly against surface, depress safety lever and pull trigger. Explosive charge imbeds stud solidly.

LOOK AT ALL THESE FEATURES

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FOUR WAYS SAFE—Plainly visible red dot indicator shows when Stud Driver is cocked; safety lever must be depressed before and during squeezing of main trigger; permanently attached safety shield must be compressed against work before Stud Driver will operate. If tilted at more than a slight angle, Stud Driver will not fire. Slight recoil. Low noise level.

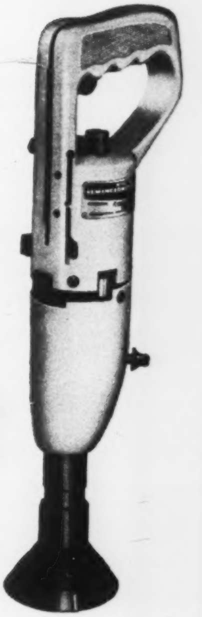
RUGGED—All working parts of the Stud Driver are made of selected steels, cased in a strong aluminum-alloy housing. Lining of safety shield is a solid block of tough, resilient Du Pont neoprene.

PRICE for Model 450 Remington Stud Driver, complete in rugged steel carrying case—only $119.50.

saves over $8,000 fastening studs with

NEW Cartridge-Powered Model 450

REMINGTON STUD DRIVER



Revolutionary new tool sets studs in seconds . . . and does it safely!

Construction job speeded at a substantial reduction in labor costs! That's the report from Straus-Frank Co., Houston, Texas, whose contract division used Remington Stud Drivers on a recent building project. In setting fastening studs for overhead air ducts, the Stud Drivers outproduced older methods eight to one . . . averaged 50 studs per hour, *including down time!*

Completely self-powered, the Remington Stud Driver needs no outside power source or extra equipment. The hinged construction of this lightweight fastening tool permits easy one-step loading—without the time loss of handling separate parts. Workmen like the Stud Driver's simple operation and safety features . . . Contractors like its lightning speed in firmly fastening steel or wood sections to concrete or steel. Studs have pull-out resistance as high as two tons!

The Model 450 Remington Stud Driver is made by Remington Arms Company, Inc., *America's oldest and foremost sporting arms manufacturer.* To obtain detailed information on this time- and money-saving tool, and for the name of your nearest distributor, mail the coupon below.

Speed all these jobs . . . with Remington studs designed for the job!

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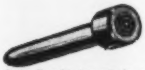
4. Fastening wood to steel.
5. Anchoring wood plates to concrete floors and ceilings.
6. Hanging steel radiator housings to concrete or brick.



Only Remington studs are identified by this target trademark on the head.

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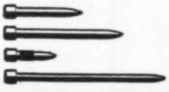
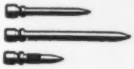
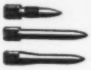


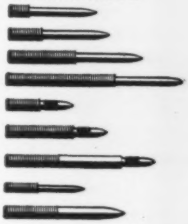
BREAK-OFF HEAD



INTERNAL THREAD



EXTERNAL THREAD



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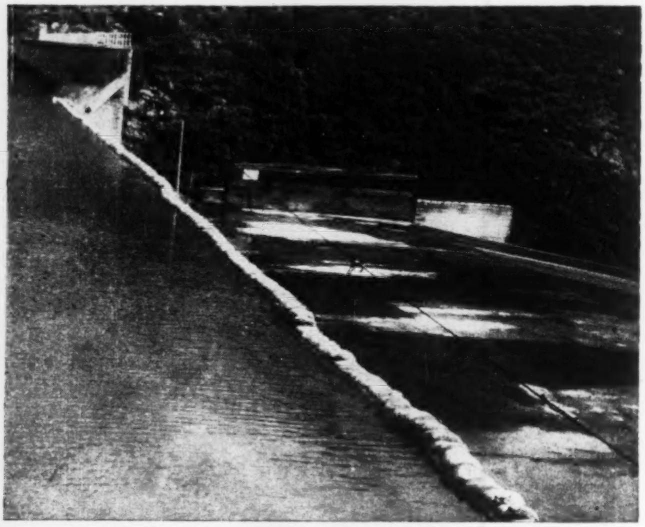

TO THE LAST DROP—Trying to squeeze last available drops out of heavy rainfalls that broke San Diego's drought, the city has sandbagged spillway on Hodges Dam.

Drought goes as rains come

While Midwest cities still fought off disastrous floods, the Pacific Southwest area—notably San Diego County and central Arizona near Phoenix—last week was rejoicing in the riches of more water than it had seen in more than seven years.

For the first time in seven years, San Diego's water supply reservoirs were filled and overflowing, Arizona watched its reservoirs on the Salt River filling rapidly, and counted on further benefits from rain-soaked farmland. In both areas, restrictions on water use were being relaxed.

• **San Diego story**—The relief for San Diego is probably most dramatic, since it came on the heels of a drastic water saving campaign organized a year ago (ENR July 26, 1951, p. 120).

Heavy March rainfalls plus promise of completion of a second barrel of the San Diego Aqueduct by 1954 turned the trick.

San Diego had been hard hit by water shortage. Mushrooming under the drive of its position as a major military base, and a center of aircraft manufacture, the city depended for water supply on a series of reservoirs along the San Dieguito River, with the difference made up by aqueduct-delivered water from the Colorado River.

But in July of 1951, the area had lived through a seven-year dry period, during which no appreciable runoff had been produced for the reservoirs. And since southern California dry periods cannot be predicted, there was no assurance of relief from rainfall. And the second barrel of the aqueduct couldn't possibly be completed under three years.

• **The answers**—The answer to the problem of what to do to keep the city drinking turned out to be a combination of a lot of things:

A voluntary water conservation program, sparked by a citizens' committee with a membership that read like a San Diego "Who's Who"; newspaper, radio TV, billboard and other advertising; even rainmakers (who were employed by the San Diego County Water Corp. and seeded 16 major storms to produce an estimated 500,000 acre-ft of added rainfall); sandbagging the spillway on Hodges Dam, (because Paul Beerman, acting city water director, wanted to gain every last drop of an additional 1,000 acre-ft of storage).

Sparkplug of the whole campaign was M. J. (Shelley) Shelton, general manager and chief engineer of the La Mesa, Lemon Grove and Spring Valley irrigation district. Long active in public and professional affairs, Shelton headed a hard-working 20-member committee that succeeded in getting nearly daily publicity in the local press, in keeping the problem constantly before citizens as a major concern of their civic and personal lives.

(*Continued on page 38*)

SAN DIEGO COUNTY WATER STORAGE

Reservoir	Capacity	Storage (thousands of acre-ft)						
		1945–46	1946–47	1947–48	1948–49	1949–50	1950–51	April 16, '52
Cuyamaca	11.6	1.3	.4	.3	1.9	.8	.3	7.5
Morena	50.1	47.9	26.6	1.8	2.3	d	.2	7.1
Barrett	42.8	21.2	11.4	7.1	1.1	1.2	.3	12.0
Upper Otay	2.6	1.8	1.4	.3	.2	.1	.1	2.6
Lower Otay	56.3	40.8	35.0	26.2	14.3	7.6	4.7	22.2
El Capitan	116.5	37.3	15.2	5.6	11.6	9.7	4.4	49.6
San Vicente*	90.2	14.0	12.5	38.4	56.8	48.5	36.0	55.1
Murray*	6.1	3.6	1.0	4.1	4.4	4.5	2.9	4.6
Hodges*	33.5	27.8	14.9	3.3	5.5	3.5	3.3	34.0
Loveland	25.4	4.9	.8	.2	.2	.9	1.0	10.2
Sweetwater	27.7	9.9	3.8	1.6	2.0	3.6	4.5	15.6

* Deliveries of Colorado River water included starting 1947–48 season. d—Less than 500 acre-ft.

Note: Storage year ends Sept. 30

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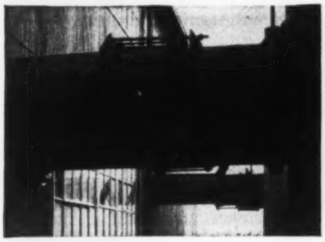
This Dresser-Coupled line supplies gas to a Detroit steel mill . . . dramatically illustrates the rugged service expected and received with Dresser Couplings. Heavy vibration from railroad tracks on both sides and over line, is harmlessly absorbed by Dresser gaskets and the line stays permanently "flexible-tight."



Ability to withstand vibration is important here. Dresser Couplings stay tight on exhaust lines of 2400-h.p. engines at a pumping station in the southwest.

In close quarters, dependable connections are easily made with Dresser Couplings. Many engineers say they are "the only practical pipe joint" in crowded locations.

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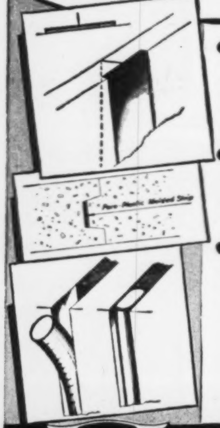

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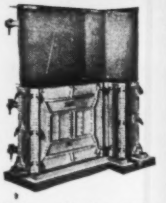

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Municipal . . .

SPARKPLUG—M. J. (Shelley) Shelton, irrigation district manager, engineer and public spirited citizen, headed San Diego's hardworking citizens' conservation committee, brought about solid savings in critical times.

And they got results: Despite a greatly increased population and military activity, water use went down to a marked degree within the first month of the conservation program, went through June and July at about 10% above the same period of 1950, and then in August settled down to the 1950 rate. During ths 1951-1952 winter, consumption fell well below the normal rate.

Now, with enough reserve in the reservoirs to insure a safe margin until the aqueduct addition is completed in 1954, the city is still so conservation minded that Shelton thinks continued water savings can be expected.

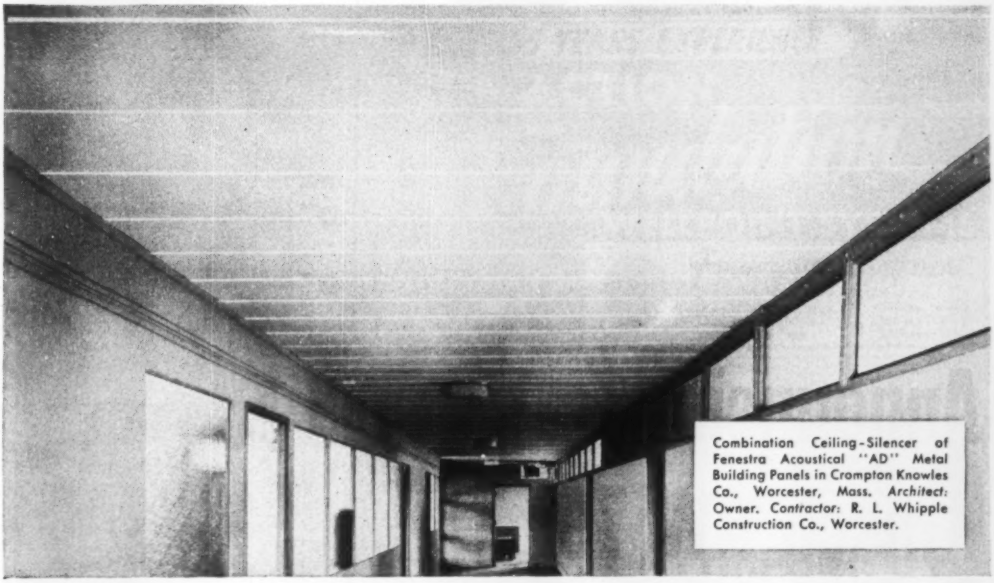
There was no attempt at rationing—the policing job involved was considered impossible, the probable bitterness enormous.

• **Arizona story**—Farther east, Arizona is also enjoying its wettest year in a long time—ten years, to be exact.

Storms in early April put an estimated 570,000 acre-ft of water on the salt River and San Carlos watersheds—the greatest volume of water since 1942. Already, two reservoirs on the Verde River (Horseshoe and Bartlett) have filled. The capacity of the Salt and Verde reservoirs—on which the area around Phoenix depends for irrigation water—is 2,076,714 acre-ft.

Some idea of the seriousness of this situation can be gained from these figures: There are 224,000 acres under

(Continued on page 41)



Combination Ceiling-Silencer of Fenestra Acoustical "AD" Metal Building Panels in Crompton Knowles Co., Worcester, Mass. *Architect:* Owner. *Contractor:* R. L. Whipple Construction Co., Worcester.

Fenestra's New Structural-Acoustical Ceiling Keeps Rooms Quiet . . . Cuts Building Costs

Here's a wonderful, economical way to hush the hubbub in corridors and rooms in the new building you're planning.

Fenestra* Acoustical "AD" Metal Building Panels form acoustical ceiling and structural subfloor or roof—all in one package . . . saving building time, labor, materials and money!

An "AD" Panel is a box beam with a flat surface top and bottom and open space between. The top surface forms the subfloor or roof deck. The perforated bottom surface forms the ceiling. In the open space is glass fiber insulation (see illustration below).

You can see how a Fenestra combination Structural-Acoustical Ceiling cuts building costs. It is speedily and easily erected—the panels interlock. It is practically indestructible. Bumps and knocks can't hurt it. The acoustical efficiency is not affected by washing or painting. And these panels are noncombustible.

For further information call your Fenestra Representative. Or write Detroit Steel Products Company, Dept. ER-5, 2277 East Grand Boulevard, Detroit 11, Michigan.

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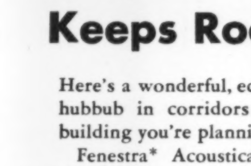
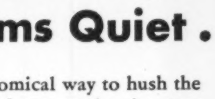
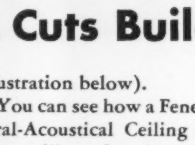
...engineered to cut the waste out of building



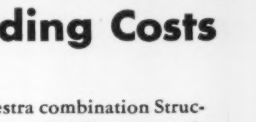
"D" Panels for floors, roofs, ceilings. Standard width 16". Depth 1½" to 7½".



Acoustical "AD" Panels for ceiling-silencer-roof. Width 16". Depth up to 7½".

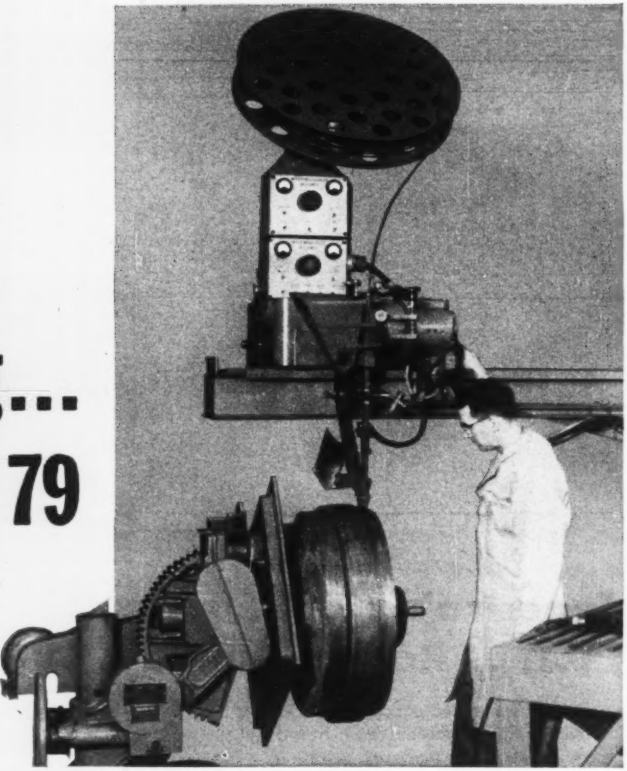


"C" Insulated Wall Panels. Standard width 16". The depth is 3".



Holorib Roof Deck. 18" wide—lengths up to 24'. Surface can be plain or acoustical.

Announcing...
Amsco AW 79



for AUTOMATIC HARDFACING

AMSCO AW 79 will meet your every requirement for better control of wear where abrasion and high impact are important factors—plus giving you all the advantages of automatic welding. It can be used for reclaiming parts worn to uselessness or for increasing productivity of new parts.

The result of extensive research and field testing, AMSCO AW 79 is especially suitable for rebuilding and hardfacing tractor rollers and idlers. Back-up rolls, steel wheels, sheeting rolls, dredge pins, as well as dozens of other applications, can be successfully hardfaced with AW 79. It can be used on any conventional automatic submerged arc welding equipment now being used.

AW 79, the first in a series of rods by AMSCO for automatic hardfacing, is an alloy steel electrode fabricated by encasing particles of alloy metals in a continuous steel tube. Deposits are of martensitic alloy steel with chromium and molybdenum as the principal alloying agents. It is available in coils weighing approximately 100 lbs., each with an inside coil diameter of 22½", and is stocked in wire diameters of 5/32" and 3/16". Packed in cardboard containers with an anti-rust agent, other coil diameters and sizes are available on request. Write today for complete information.

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Amsco Welding Products distributed in Canada by Canadian Liquid Air Co., Ltd.

gravity irrigation in the Salt River project. Last year, 10,436 of these acres lay fallow because of lack of water. This year farmers will have 3 acre-ft per acre, ample for most crops.

The underground storage beneath the project area has been depleted.

- In the past two years alone, the table has fallen an average of 16 ft. And recharge is slow—authorities fear that at present rates of pumping, no recharge may occur.

- **Roosevelt Dam is key**—Fifty-year-old Roosevelt Dam, with a capacity of 1,532,000 acre ft of water, is the key to the whole picture. The reservoir has been filled to capacity only four times since it was built—but the last filling (1940-41) provided water until 1949, when enough more rain fell to carry the area through to June of last year.
- **Elsewhere**—Conditions elsewhere in the West are varied, but generally good—if flood threats in some places can be considered good. Runoff in the Pacific Northwest will be at near normal; all reservoirs in central and northern California are either filled or expected to fill this year.

One board proposed for two commissions

In Milwaukee, Wis., two sewerage commissions will be abolished and their functions taken over by a county board if Lawrence J. Timmerman's recommendations are followed.

Timmerman is the chairman of the county board. He made his proposals during a discussion of a legislative program considered by the board.

The two commissions—the city and the metropolitan—have, in effect, unlimited taxing powers, since the county board is required by law to issue bonds for whatever sums they demand.

"Further," he declared, "the reasons for lodging such unlimited power in bodies that are not elected by the people no longer exist."

The metropolitan commission supervises the construction of storm sewers outside the city of Milwaukee. The city commission has charge of all storm and sanitary sewers in the city and is responsible for maintenance of the storm sewers outside the city once they are constructed. It is also responsible for operation of the sewage disposal plant on Jones Island.

Jurisdiction of the metropolitan commission extends over what is known as the metropolitan sewerage area. This covers nearly 97,000 acres in the same drainage area as the city.

(*Continued on page 43*)

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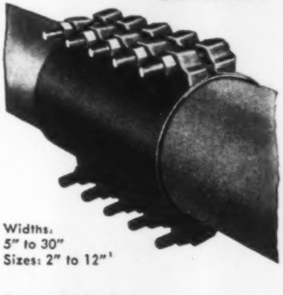

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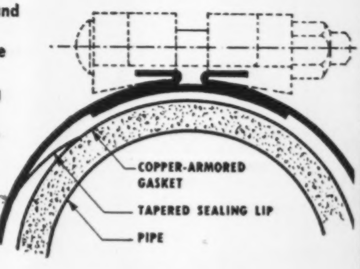

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YOUR Adnun starts smoothly without blocking, laying and traveling on its own template of just the thickness your "specs" call for. With the Adnun Oscillating Cutter Bar, the strike off is a cutting action free from the tearing that comes with dragged screeds. Overlapping action at the joint compacts the material against the parallel course and makes a tighter joint—a safer joint for modern high speeds.

Cutter Bar Tooth design provides a compressing action that crowds material into depressions and cavities—smoothly, positively and without vibration that reduces machine life.

But more important is the Adnun advantage of Continuous Course Correction. This feature, the result of the fact that the influence of sub-base irregularities on the Cutter Bar is progressively reduced, means the practical elimination of irregularities with each successive course.

This is the reason why Adnun laid roads are smoother, longer life roads. You should check up on this advantage. Let us tell you more.

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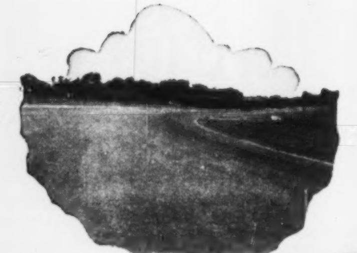
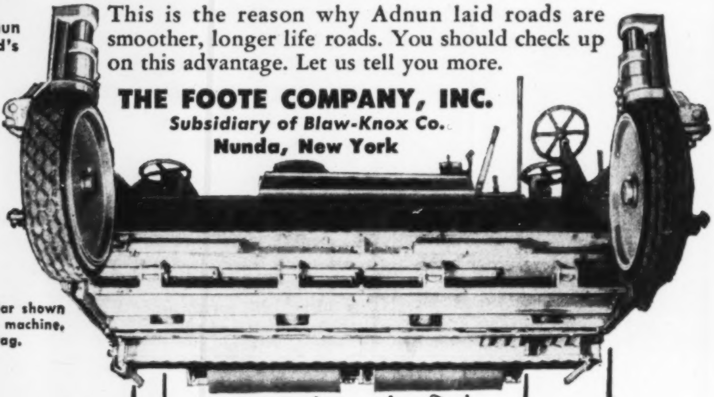
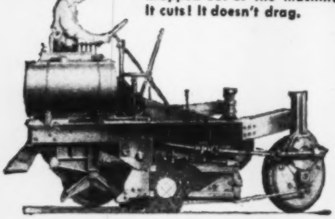


The Indianapolis Speedway, Adnun laid in 1936, carries the world's fastest traffic.



The Adnun Cutter Bar shown dropped out of the machine. It cuts! It doesn't drag.



The Adnun travels on its own template, always accurate as you set it. Note that when the front wheel drops into a depression there can be practically no influence on the Cutter Bar.

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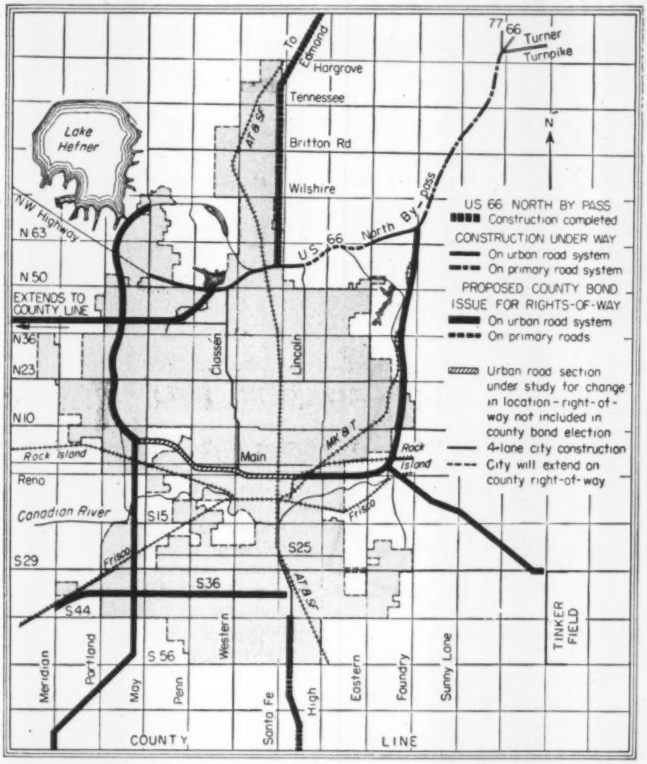
To Edmond
77
66
Turner Turnpike
Hargrove
Tennessee
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Wilshire
Lake Hefner
NW Highway
N 63
N 50
EXTENDS TO COUNTY LINE
N36
N23
N10
Rock Island
Reno
Canadian River
S15
S29
S44
S36
S56
S25
AT & SF
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Frisco
US 66 North By-pass
N
US 66 NORTH BY PASS
Construction completed
CONSTRUCTION UNDER WAY
On urban road system
On primary road system
PROPOSED COUNTY BOND ISSUE FOR RIGHTS-OF-WAY
On urban road system
On primary roads
Urban road section under study for change in location - right-of-way not included in county bond election
4-lane city construction
City will extend on county right-of-way
TINKER FIELD
Meridian
Portland
May
Penn
Western
Santa Fe
High
Eastern
Foundry
Sunny Lane
COUNTY LINE

OKLAHOMA CITY voted for a lot of street and highway improvements. Much of the work shown above is under way.

Improvements costing $100 million planned and under way for city

With the arrival of spring and good construction weather, Oklahoma City's multi-million dollar improvement program has hit high gear. Nearly $100-million in improvements is under way or planned for the metropolitan area by city, state, county and federal agencies.

Oklahoma City's citizens seem most interested in street and highway improvements. This is partly explained by the city's high automobile registration. The per capita figure, according to recent transportation surveys, is among the highest in the nation.

When Oklahomans want to go some place they drive. A recently advertised fish seining at one of the city's reservoirs drew 20,000 cars on US 66 west of the city in a two-hour period.

- **Work under way**—Under construction now is a new urban bypass, skirting the north side of Oklahoma City. This limited access facility is tied to the Turner Turnpike to Tulsa.

Plans are under way for a series of bypass highways on the west, east and south sides of the city. A new divided highway will replace the old US 77 south to Texas, and a new airline route is being opened to the north side of the county. Voters in a December county bond issue approved $3 million to buy urban rights of way for these projects. The state and federal government will pay all construction costs, estimated at upwards of $35 million.

The Turner Turnpike, a separate authority, is well under construction. It will eventually cost above $42 million at present estimates. Many of these construction dollars are pouring into Oklahoma City business houses, increasing "road consciousness."

Oklahoma City voters in May of 1950 voted $36-million in 12 separate issues for improvements, including $6½ million for street work. Part of this money was used for urban bypass rights of way in the city limits.

Other projects included openings of wider outlets from the business loop to residential areas.

Classen Ave., an important north-south artery, was pushed through a dead-end for three blocks to intersect with Main St.

Drivers will have an eight-lane outlet from the heart of downtown to the north urban bypass, 50 blocks north, when work is finished.

Eight-lane routes with median dividers were opened to the southeast, northwest and northeast sections of town. Two east-west streets fringing the downtown loop were widened and resurfaced and improved on the same plan. Property owners pay two-thirds of the cost, the city taking the other share. This method of stretching the bond fund paving dollar has received good support. Businessmen on Main and Broadway welcomed the chance to get their streets improved at costs ranging from $11.67 to $16 per front ft.

In all, the city has about 25-mi of bond issue street work under contract, and other projects still on the drawing boards. Bulk of the work is on divided boulevards and most of the design is for asphaltic concrete.

The city's total bond-issue work is now 46% complete. Forty-seven projects have been completed and 36 others are under construction.

Here is a breakdown of some of the bondwork and stages of completion:

- **Water**—$10,048,000 voted and 54% of work completed. Of this amount $5 million spent in extending water mains to newly annexed areas and to meet underwriters' specifications. Bids due soon on expansion of the filtration plant at Lake Hefner. This job will increase capacity of plant from 15 mgd to 45 mgd. Estimated cost of this job is around $2 million.

- **Sanitary sewers**—$4,540,000 voted and 54% of work completed. Includes a new 10 mgd activated sludge plant. Construction contracts is for $1,440,000 and $220,000 set aside for equipment. Designed to permit 50% expansion without change of lines.

- **Storm sewers**—$2,710,000 voted and 42% of planned work completed. In-

(*Continued on next page*)

cludes scattered drainage areas annexed since the 1945 bond issue, or work not handled at that time.

- **Parks**—$2,100,000 voted and 58% of work completed. Community centers, pools and park roads included. Some work delayed under NPA orders.

- **Airports**—$600,000 voted and 60% spent. With CAA participation the administration building at Will Rogers airport to be remodeled, runways extended, aprons widened and turfing done. Runway, apron and administration building work proposed for Tulakes airport if the money lasts.

- **Library**—$822,000 voted and 19% spent. Half-million dollars voted in 1945 added to issue to construct branch library in Capitol Hill, south side suburb, and for new main library under construction in downtown Oklahoma City.

- **River park**—$2,775,000 voted and 8% of money spent. City has acquired between 10 and 12% of needed right-of-way for a 13.8 mi depressed canal (N. Canadian River) through the city. It will be 400 ft wide and provide 45,000 cfs protection. Federal government to pay actual construction costs.

At the present time, contractor barricades all over town have traffic pretty well snarled.

"You can see signs of our work everywhere," wryly admits W. W. Baker, city engineer. "But in a few months the view will be much different. People will be traveling our new streets. They are the projects people will remember. Sewer and water lines are out of mind when the trench is filled. But everyone who rides or drives will constantly be reminded of where the bond issue dollars went, however, when the street system is finished."

Scranton sewer authority

A Pennsylvania State Supreme Court decision gave the "green light" to Scranton officials for their program setting up a municipal sewer authority to handle construction of sewer systems. Later the authority would supervise building the proposed $8-million sewage disposal system.

An ordinance authorizing the creation of a sewer authority was adopted by city council on Jan. 24, 1951, but establishment of the agency has been held up pending a ruling.

(*Continued on page 47*)

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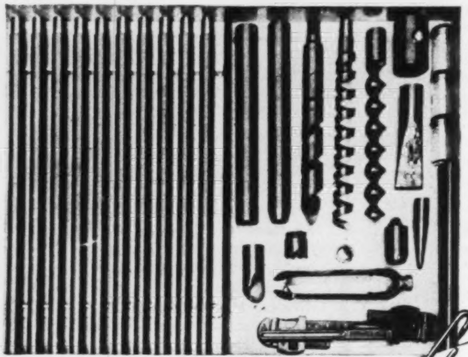
Everything you need for accurate sub-surface information



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A Crescent bucket penetrates tough materials with ease, gets a full load quickly hauls this load at speed of 400 f.p.m., dumps automatically wherever operator desires—all with economical use of power.

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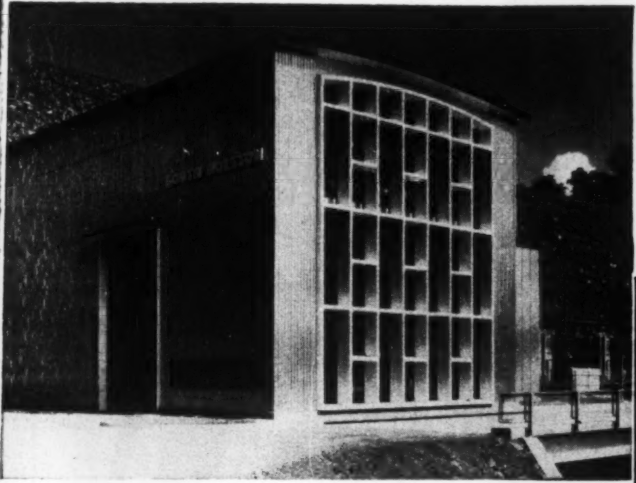

Two views of the South Holston Dam Powerhouse, Bristol, Tenn.

Designed by Tennessee Valley Authority, Design Department.

Built by T.V.A. Construction Dept.

ROBERTSON Q-PANELS set Design Standard for Modern Power Plants

Good design originates in the designer's attitude, no matter what the material. But the simplicity of Q-Panel construction promotes logical straightforward design thought.

The T.V.A. Design Staff has used Q-Panels with such skill, and such understanding of simple lines, that the integrity and beauty of their Q-Panel buildings arouse admiration from laymen and professionals alike. The power stations shown use fluted aluminum outside and flat steel inside. The pictures are their own best testimony for the cleanness of line and pleasing proportions.

Q-Panels go up fast—50 sq. ft. in 9 minutes. A small crew quickly attaches the panels to the steel framework—much more quickly than little blocks can be piled up. Q-Panels are insulated metal sandwiches, only 3″ thick but with insulation value greater than a 12″ masonry wall. They are offered in a variety of maintenance-free exteriors, depending upon availability of materials at time of ordering.

The great number of Q-Panel electric power stations, from coast to coast and in many other countries, now under construction witness to the superiority of this wall material for power plants. Q-Panels fill the bill so well, they are rapidly becoming the typical traditional material.

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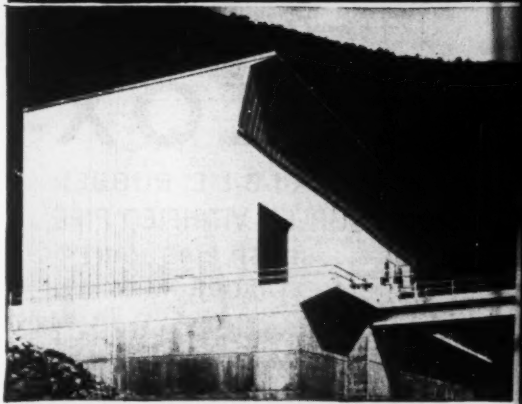
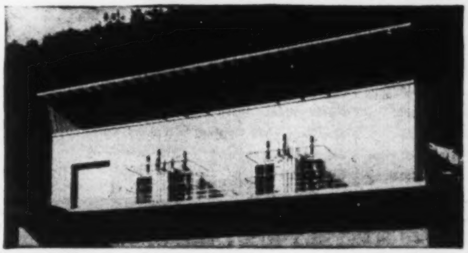
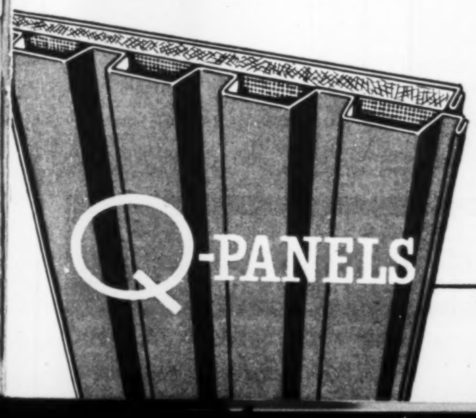




Watagua Dam Powerhouse Elizabethton, Tenn.

Designed by T.V.A. Design Dept.

Built by T.V.A. Construction Dept.



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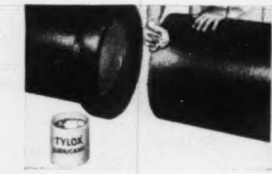

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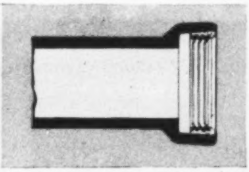

Cross Section of TYLOX Joint

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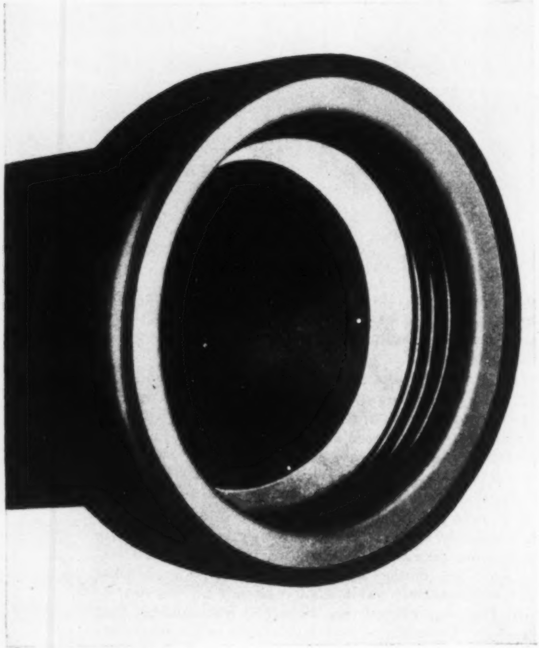

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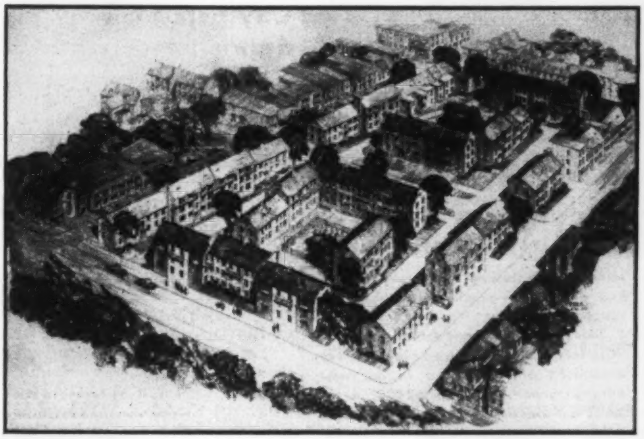


PENN TOWNE APARTMENTS project of the Philadelphia Redevelopment Authority, the first built under the Federal Housing Act of 1949.

First Title I housing completed

Shabby, squalid slums in north central Philadelphia—a section known as the East Poplar area—have given way to a new housing project which will provide homes for 174 families in the lower-middle income group.

The $2.5 million Penn Towne project of the Philadelphia Redevelopment Authority, one of the first urban redevelopments to be built under the Federal Housing Act of 1949, replaces neglected housing occupied by 181 families.

As in all major cities, the cost of acquiring land and existing structures for medium rental apartments is prohibitively high.

To acquire the 4.11 acres needed for the project, the Redevelopment Authority spent $621,144 and wrote down the value to $93,574, representing a subsidy of $527,570. The Authority's Executive Director Francis J. Lammer believes that, over the years, the project will pay for itself.

• **Operation**—Identical quarters, if privately offered, would cost 50% more than the scale set by the authority. Twenty efficiency apartments will rent for $55 a month; 34 one-bedroom units at $64.50; 84 two-bedroom units at $75 and 36 three bedroom apartments at $81.50. Rentals, expected to produce $150,000 annually, include hot water and heat, refrigerators, closets and storage space, laundry and drying machines and playground facilities.

To further carry out the area redevelopment plan, the city council has authorized acquisition of 1.4 acres adjoining the Wister Public School in the East Poplar area to provide additional recreation facilities. The land will be sold to the Philadelphia School District, the redeveloper, for $28,008. Estimated acquisition cost is $168,950, leaving a writedown of $140,942.

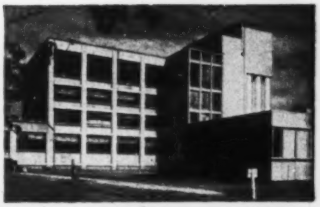
• **Contracting**—Ground was broken for Penn Towne apartments last April with United Building Construction Co. as general contractors. Their contract totaled $1.7 million.

To retain the flavor of old Philadelphia, the shells of 14 brick buildings were retained and incorporated in the general overall project.

• **Financing**—The Commonwealth of Pennsylvania allocated $733,000 to the project from a $15 million fund appropriated for the state's housing program. In addition, the project received $275,000 in federal aid. The balance—$1.7 million—was financed by the Authority from bonds sold last September.

The Redevelopment Authority now has a $29 million program in motion calling for acquisition of land sites, demolition work and various improvements. At least two proposed projects will be in the "old" section of the city near the proposed Independence Square Mall. The Authority also plans redevelopment of 2,550 acres of lowland in the Eastwick section southwest of Philadelphia.

(*Continued on next page*)



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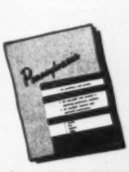

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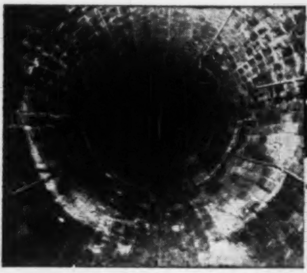

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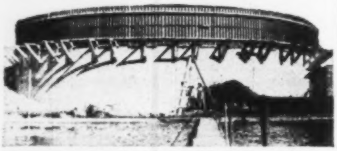

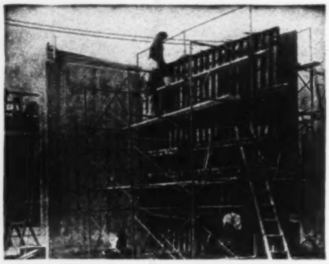

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City gets highway plan drawn under state law

A master plan for development of a 7.4-mile arterial route system for Saratoga Springs and its environs, designed to alleviate congestion arising from heavy traffic movements into and through the city, was presented last month by New York State to city and county officials.

Estimated at $2.6 million at current costs, the proposed master plan provides modern scientifically designed highway facilities in and around Saratoga Springs to remedy traffic ills that now threatens the economic future.

The total cost to the city for construction of the proposed improvements is estimated at only $216,000 which represents one-half the required right-of-way cost for arterials within the tax district. Cost of the remaining half of right-of-way will be paid by the state. Construction costs will be met by equal amounts of state and federal aid highway funds.

Superintendent of Public Works Bertram D. Tallamy, presented the department's urban report to Mayor Addison Mallery and Joseph Turcotte, chairman of the Saratoga County Board of Supervisors.

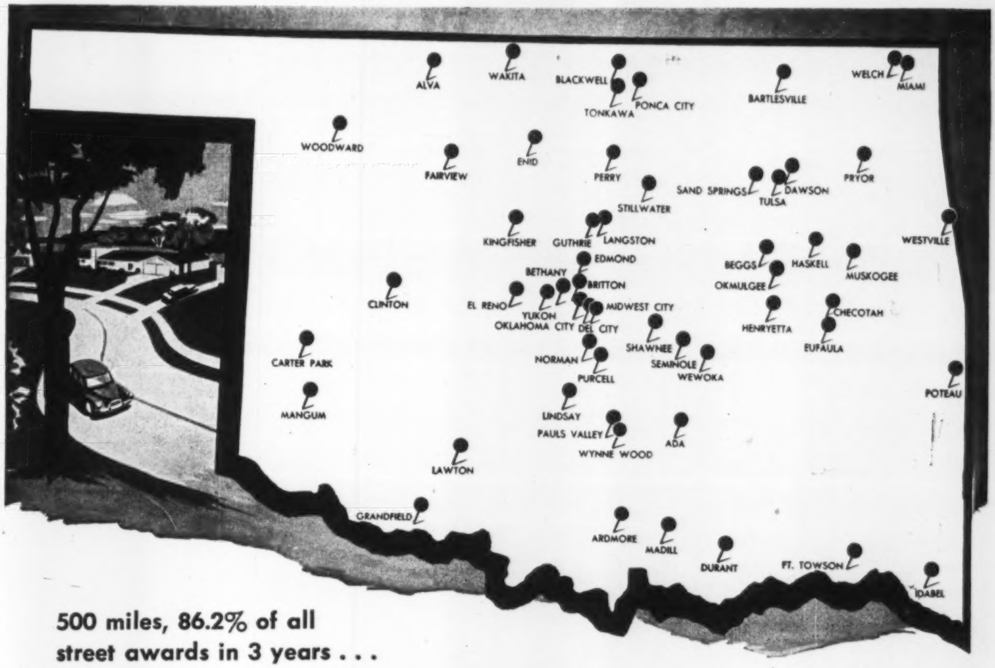
Arterial Law

Planning New York State's urban arterial highway program has been actively under way since 1946. The basic purpose of this program is the development of a general plan of arterial highway routes for each urban area of the state. These routes, when constructed, will serve to expedite state highway travel into and through cities and to relieve major urban traffic congestion as well.

Following local acceptance of the plan, specific designation of the recommended arterial routes may be incorporated in the highway law by legislative amendment. Specific arterial routes may be selected and advanced to project design and construction stage, to the extent which prevailing state highway funds, federal aid highway allocations, and local financial programs will permit.

Official approval of the recommended overall plan is requested from the city concerned.

Under the governing provisions of the highway law, the state assumes the costs of planning, design and recommended construction of approved arterial route projects within its cities, as well as 50% of the costs of rights of way. The remaining costs are assumed by each city.


ALVA
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500 miles, 86.2% of all street awards in 3 years . . .

CONCRETE STREETS are the overwhelming choice in Oklahoma

In the 56 cities on the map above concrete paving awards made during 1949, 1950 and 1951 totaled more than 500 miles of new streets. This was 86.2 per cent of all street paving awarded by all cities in the state during the three years.

There is a reason for this overwhelming choice of concrete for Oklahoma streets. Under the state paving law property owners have the right to request the type of pavement they prefer by filing a petition with the city clerk. If 51 per cent or more of the property owners in a paving district petition for a specific type of pavement, the streets in that district then are paved with that type of pavement.

The record of paving awards in the past three years is ample proof that in Oklahoma cities the "people's choice" in pavements is concrete.

Concrete also is the "people's choice" in most cities nationwide. Motorists, taxpayers and city officials prefer concrete for its many advantages.

Concrete is moderate in first cost, yet can be designed accurately for any axle load—and will *keep* its load-carrying capacity throughout its long service life.

Concrete's record of performance shows that it costs less to maintain and lasts longer than other types of pavement. These factors give you this equation of concrete pavement economics: Moderate first cost + low maintenance expense ÷ long life = ***low annual cost.***

Concrete is safer too. Its permanently gritty texture gives it uniformly high skid resistance, wet or dry. Its high light reflectance enables you to see better at night, thus helping reduce accidents. This reflectance factor also means saving on street lighting costs.

For more information about safe, ***low-annual-cost*** streets write for "*Design of Concrete Pavements for Municipal Streets.*" It's free but distributed only in the United States and Canada.

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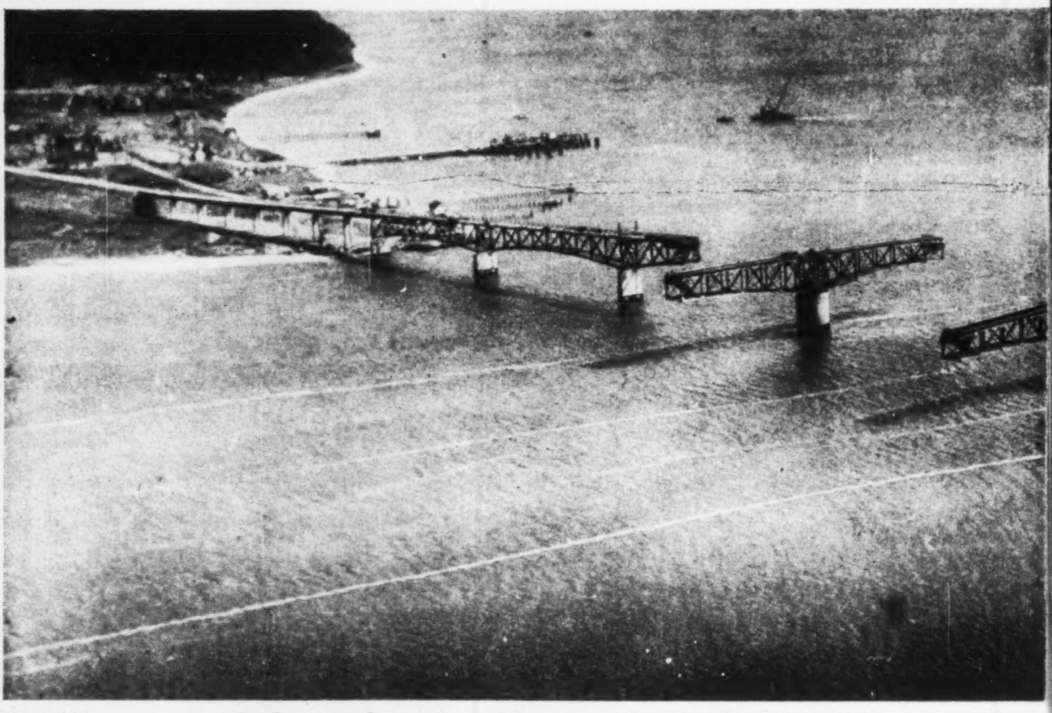


York River crossing is famous for twin swing spans plus the fact that the . . .

Bridge pulls Tidewater Virgina together

THE OPENING this week of the new bridge over the wide and historic York River at Yorktown, Virginia focuses attention on two important aspects of the notable structure. One is that it represents an engineering and construction triumph. Its deep piers stand in as much as 80 ft of swiftly running water (ENR Dec. 21, 1950, p. 32) and its deck truss superstructure — containing a unique arrangement of twin tandem swing spans—economically solves a problem that for years had seemed to call for a long span high-level crossing.

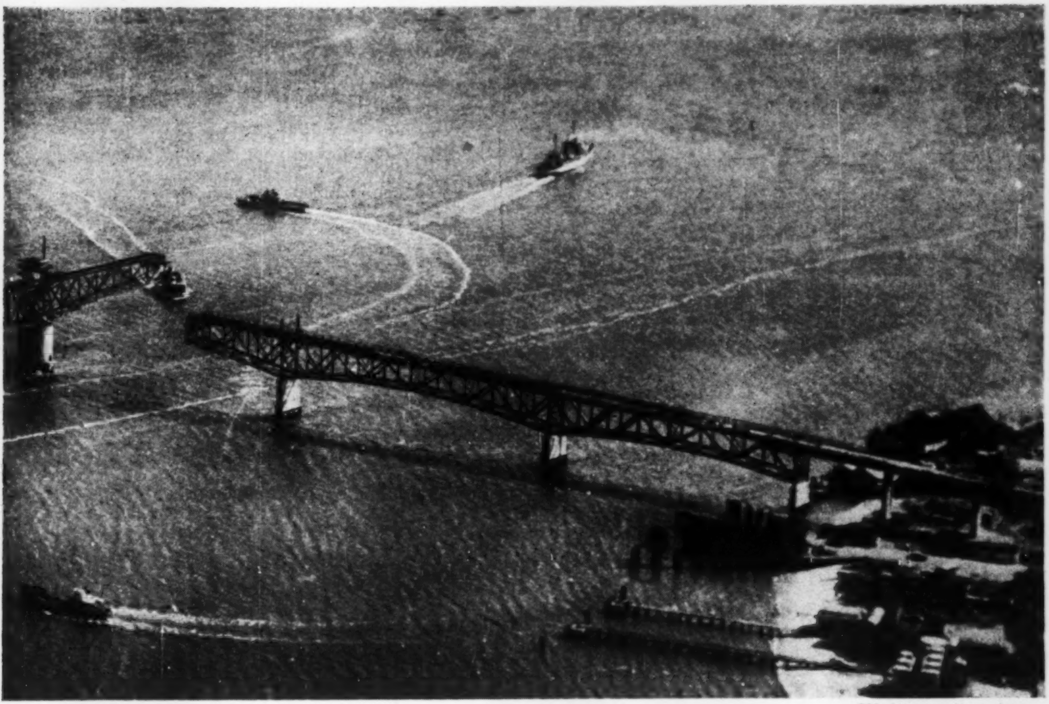
The second aspect of significance—and a basic one—is that the bridge marks another step in pulling together the several peninsulas of Tidewater Virginia, which have long suffered from lack of easy communication between one another.

• Bridge needed—This eastern part of Virginia, bordering on Chesapeake Bay, is slit into long fingers by four great tidal rivers that extend from 50 to more than 100 miles inland. On the northern border is the Potomac, not crossed by a bridge until the town of Dahlgren is reached some 50 miles from the mouth. The same condition exists on the next river to the south, the Rappahannock, but here plans have just been completed for a $14 million structure, almost at the mouth of the river at Greys Point. What might be called a corollary to this improvement is actually under way in the form of a $1 million bridge across the mouth of nearby Piankatank River at Twiggs Ferry.

Below the Rappahannock is the York, now crossed by the new bridge, which is only 8 miles from the outlet of the river into Chesapeake Bay. And finally, at the south, is the James River, where a private toll bridge has existed across the mouth since 1928, but where the mouth is not at Chesapeake Bay but in the arm known as Hampton Roads. Lack here of traffic crossings among the water-separated cities of Newport News, Portsmouth and Norfolk has posed the same problem—and in more acute form—as exists for the water-separated peninsulas to the north.

• Part of broad financing plan—This is the geographical situation into which the new York River bridge is now fitted, and it is one to which the Commonwealth of Virginia began to give serious attention in 1940 with the passage of a revenue bond act. Under the authority of this act the highway department sold $19 million of bonds to cover not only the building of the $9-mililon, two-lane York River Bridge, but also the purchase of the James River Bridge and the ferry systems in the Hampton Roads area. Likewise, the state created the Elizabeth River Tunnel Commission, which is currently building a combination tunnel and bridge connection between Norfolk and Portsmouth (ENR Nov. 16, 1950, p. 44). And in recent months it has begun studies of a tunnel-causeway project across Hampton Roads itself to connect Norfolk and Newport News.

So, as stated, the York River Bridge

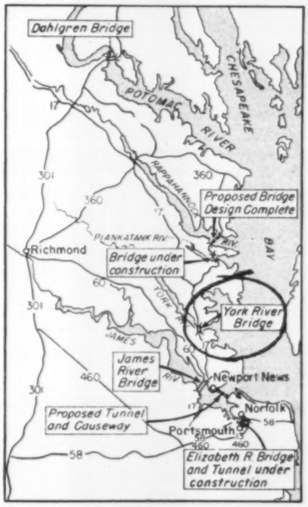


Washington Star photo

must be regarded as another step in a broad plan for pulling closer together previously separated parts of the state. In so doing, however, it gains national as well as local significance because it eliminates a delaying ferry crossing in the main Atlantic Coast highway route between New England and Florida. And to top off its importance the structure itself is one to command attention.

The foundations of the York River Bridge are probably its most notable technical feature—one of the steel caissons being of record-breaking 110 ft height as floated in for sinking to a cutting edge depth of 150 ft—although the superstructure design and its erection also present some elements of interest. The foundations, as built by the Kansas City Bridge Co. and the Massman Construction Co., were fully described in ENR Dec. 21, 1950, p. 32. It remains to describe the superstructure, which, like the foundations, was designed under the supervision of the highway department by Parsons, Brinckerhoff, Hall & Macdonald of New York, consulting engineers, in collaboration with Wm. R. Glidden, state bridge engineer.

The steel erection work was carried out by the Virginia Bridge Co., as its last job under that well known name before it ceased to be a separate subsidiary of U. S. Steel and became a part of the company's new fabricating setup known as the American Bridge Division.

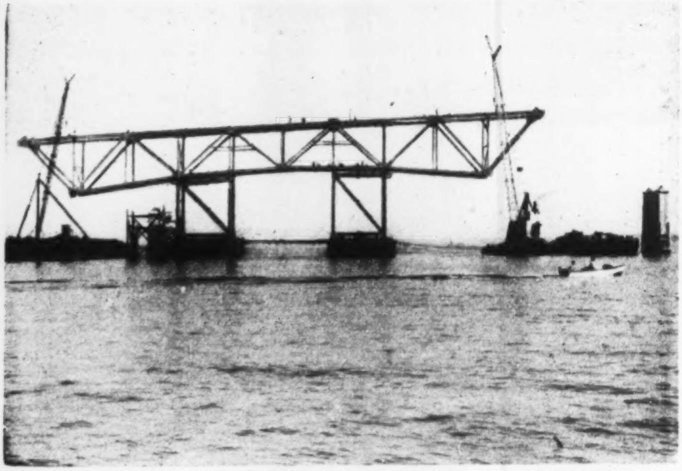

Dahlgren Bridge
POTOMAC RIVER
CHESAPEAKE BAY
RAPPAHANNOCK
PLANKATANK RIV
RIV.
Proposed Bridge Design Complete
Bridge under construction
Richmond
YORK RIV
York River Bridge
JAMES RIV
James River Bridge
Newport News
Norfolk
Portsmouth
Proposed Tunnel and Causeway
Elizabeth R. Bridge and Tunnel under construction
17
301
360
60
460
58
13

TIDEWATER VIRGINIA needs fewer ferries, more bridges, like the new one that now crosses the York.

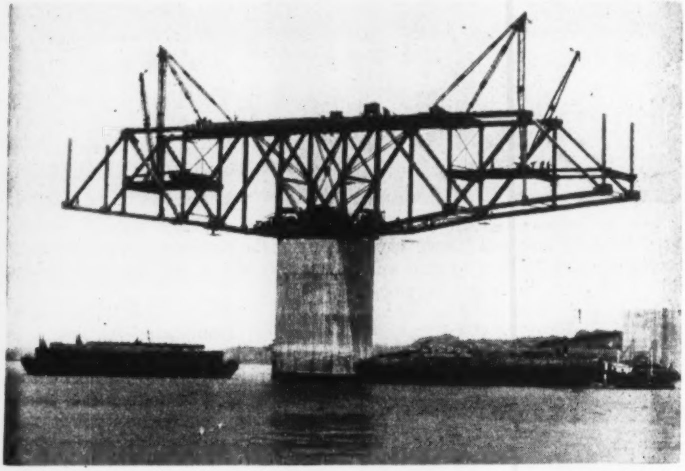
• Tandem swing-spans—As shown in the accompanying photo, the bridge is a deck truss structure with deck girder approaches. Controlling the layout was the requirement of a 450-ft clear navigation opening, and studies indicated this could be provided more practicably by two swing-spans in tandem than by a single lift-span.

Affecting the decision was the desirability of keeping the loads on the piers at a minimum. Not being founded on rock, the piers could suffer differential settlement, and because of their height (over 200 ft) a small settlement of one corner at the base could move the top enough to cause lift-span guides to bind. Moreover, a lift-span requires counterweights that weigh as much as it does. (In this connection, a bascule was ruled out because its counterweight might well be three times as heavy as the span itself.) One advantage of a swing-span is that it is self-balancing in opening, and thus requires no counterweight.

It should also be mentioned that the National Park Service, desirous of not changing the skyline in the



READY TO FLOAT IN—Floating rigs complete assembly of one of the anchor spans in the cantilever truss portion of York River Bridge. After it is placed on its piers, derricks will assemble 140-ft cantilever extensions at either end.



GUY DERRICK TRAVELERS erect one of the two swing spans of the York River Bridge. Operation at right has reached stage where derrick is setting a new platform preparatory to moving forward.

Yorktown area, had long objected to a high-level bridge. On the same grounds, the NPS would probably also have opposed the high towers of a lift-span. Adoption of the tandem swing spans had another advantage in that it made it possible to give the entire river crossing of deck trusses an appearance of continuity.

The truss portion of the bridge is symmetrical about the centerline, with a cantilever layout of spans at either end of the swing spans, which are each 500 ft long and supported by pivot piers which are 500 ft apart center to center. The second span, offshore, of these cantilever layouts is the anchor span, 350 ft long; and projecting from either end are 140 ft cantilevers. The riverward cantilever connects to the 250 ft arm of a swing span to give a 390 ft span, while the shoreward cantilever carries one end of a 140 ft "suspended" section (whose other end is on the shore pier) to provide a 280 ft span.

The girder spans of the land approach are 90 ft long, with the exception of two of 65 ft at the extreme south end. The overall length of the bridge is 3,750 ft of which 1,210 ft represents the girder approaches.

• **Design innovations**—Broadly speaking, the York River Bridge superstructure is extraordinary only in its use of two sizable swing spans in tandem, but this is an arrangement that is novel and possibly unique. It made necessary the use of locking devices not previously used on swing spans.

Each York River swing span weighs 920 tons and is of the single-center-pivot type. When the span is in the open position the entire load is carried by this central support, but lateral stability is furnished by four pairs of cast steel balance wheels set 90 deg apart on a 34 ft 6 in. diam circular track integral with the gear rack through which the span is operated. When the span is closed the dead load is still carried by the central support, but two wedges are moved in between the span and the pier top to transfer the live load.

Such an arrangement has been used before at the center of swing bridges, but not in combination with elastic supports at the ends of the spans—in this case the cantilever arms of the adjacent fixed spans and, at mid-channel, the ends of the swing spans themselves. Usually a pier is available at the ends of a swing span so that wedge end-lifts can be used to insure a positive load reaction. Such end-lifts at Yorktown, however, would have caused the spans to rotate vertically about the center pivot, putting excess load on the balance wheels and causing the ends of the spans at mid-channel to dip. A solution was found in the use of bascule-type shear locks to provide live load supports at the ends of the spans.

These locks each consist of a pair of I-shaped cast steel bars 18 in. deep, 10 in. wide and 18 ft long. At mid-channel they are installed on the swing spans, while at the shoreward joints they are on the fixed spans.

Located near the curb lines, the bars are moved longitudinally by electric motors, into or out of bearing slots on the adjacent spans, to effect the locking and unlocking operations. At the mid-channel joint, which is required to be unusually wide to permit the ends of the swing spans to clear one another in opening and closing, the bars move 4 ft 3 in. Less than half this movement, however, is necessary at the shore-end joints since the clearance requirements next to the fixed spans are less than where two movable spans come together.

An additional novel detail is the use of small concrete counterweights in the swing spans to correct some slight unbalances in the dead loads—as from the shear locks which are carried by one end of the swing spans but not by the other. By this balancing it is assured that all of the dead load is carried by the center pivot bearing and does not affect the careful adjustment necessary in the balance wheels, locks and joint mechanisms.

An open grating steel floor is used on the swing spans to effect a considerable saving in weight, a reduced resistance to vertical wind forces and a reduction in the amount of power required to move them. Each span is driven by three 20-hp motors, and can be moved by only two if necessary. Both bridges will be operated from a single house located at the center of the south span 18 ft above the roadway. The spans operate singly for both the first and last 8 deg of rotation, but for the rest of the time they are moved simultaneously. Highway traffic will be warned of an open bridge by lights and by warning gates 280 ft from the opening. These are supplemented by heavy barrier gates 140 ft farther along.

• **Erecting the girders**—Steel erection, too, presented some special features. One of these resulted from the layout of the approach girders which, instead of resting on shoes at the piers, are attached to the ends of the floorbeams, which are carried by the shoes. This arrangement, long used in Virginia, permitted narrower piers, with resulting economy. But it also required that the floorbeams be tied down while the first girder was being erected, else they would have toppled off the piers.

The tie-down, in the form of a yoke of 1½ in. rods, was connected through turnbuckles to anchor rods set in the piers just outside the shoe on the far side of the pier from the girder being placed. Erecting the opposite girder was simple since its overturning effort was already balanced by the girder previously erected. During these girder erection operations the floorbeams also had to be supported in an upright position, and this was accomplished by inclined shores of 4x6's set between the top flange of the floorbeams and blocking placed on the centerline of the pier.

• **Fixed spans floated in**—Erection of the fixed truss spans was accomplished by a floating-in operation using two railroad car floats 40 ft wide by 270 ft long. Set transversely to the direction of the span being assembled and separated about 60 ft by heavy steel struts and diagonal wire rope bracing, the car floats were equipped with steel tower centering about 30 ft high upon which the spans were assembled. The assembly, done by 50-ton floating derricks, was carried out near the north bank of the river from where the spans were moved to their positions in the bridge.

First to be erected and floated into place were the 350-ft anchor spans. Derrick boats then set the members for the 140 ft cantilever arms at each end of this span. Finally the suspended spans, i.e., the portions of the end spans nearest the shores, were assembled on the floats and towed to position. In all cases the spans were moved in at high tide, and lowered onto the shoes as the tide fell, aided where necessary by pumping water into the floats.

• **Guy derricks on swing spans**—Erection of the two swing spans was carried out simply and expeditiously by the use of guy derricks working outward in a balanced arrangement from the pivot piers. One span and then the other was erected in this way, simultaneously with work on the floating-in of the fixed truss spans.

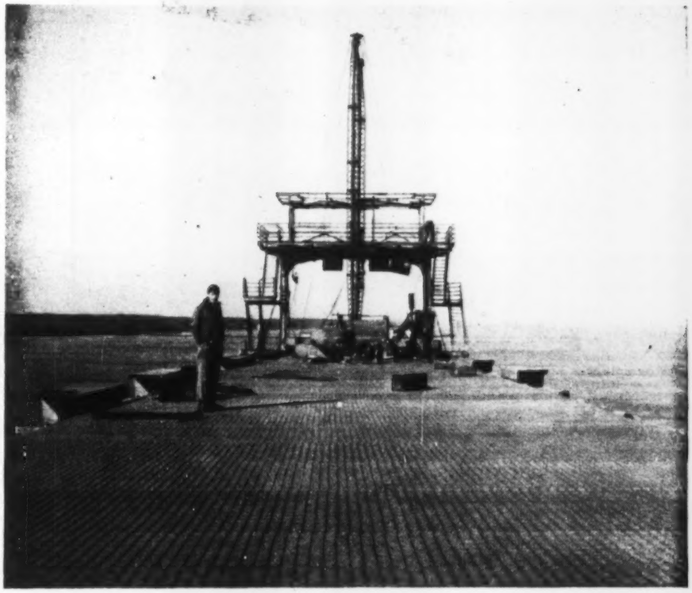
Work was begun by erecting the steelwork over the pivot pier and two panels of truss in each arm by a floating derrick. Included in this pier work was not only the pivot girder, a considerable portion of the rack and track and the truss members, but two temporary blocking girders that carried the span reactions into the pier during the erection period. They were supplemented by tie-downs to anchor bolts in the piers.

After this much of a swing span had been erected, the floating derrick then assembled platforms in each arm at about mid truss depth and set the guy derricks (60-ft mast and 50-ft boom) on them. Occupying an entire panel (35 ft long and about 28 ft between the trusses) the platform consisted of 36-in. 194-lb floorbeams and 24-in. 94-lb stringers from the fixed spans. It was floored with timber.

The guy derrick was set as close to the front end of the panel as was possible (maximum about 8 ft), so that it could pick the heaviest pieces (14 ton chords 70 ft long) without booming out more than 15 ft ahead or 21 ft to the side.

An interesting variation on usual guy derrick installations was the use of stifflegs in lieu of guys, to provide more stability and, in effect, to transform the rig into a traveler. In moving forward, the derrick first assembled a new platform in the panel ahead and then pulled itself along by attaching the boom-falls to the front beam of the platform—the mast sliding on its base and the stifflegs along the top chord. Supply barges were anchored directly under the ends of the swing span arms, and the steel picked directly by the guy derricks.

The major part of the steel erection was completed late last fall, and the winter months have been used in erecting the swing span machinery and in paving the deck of the approach girder and truss spans. With the completion of this work, and the testing and tuning up of the swing span operations last month, the bridge was ready for the official opening May 7. It will be known as the George P. Coleman Memorial Bridge in honor of the second commissioner of the Virginia Department of Highways.



OPEN STEEL GRATING DECKS are used on the twin swing spans to reduce weight and wind resistance. Operation of both spans will be handled from house shown being erected on this south span.

The Drum Said
KEROSENE...
l'Hotel de Ville
10F

...but the Explosion Shouted "GASOLINE"!

A shattering shop blast that showers fire, injury, destruction — a court trial in a foreign tongue — a heavy liability judgment for an American distributing firm operating abroad . . . tragic consequences of an employe's error in filling an order.

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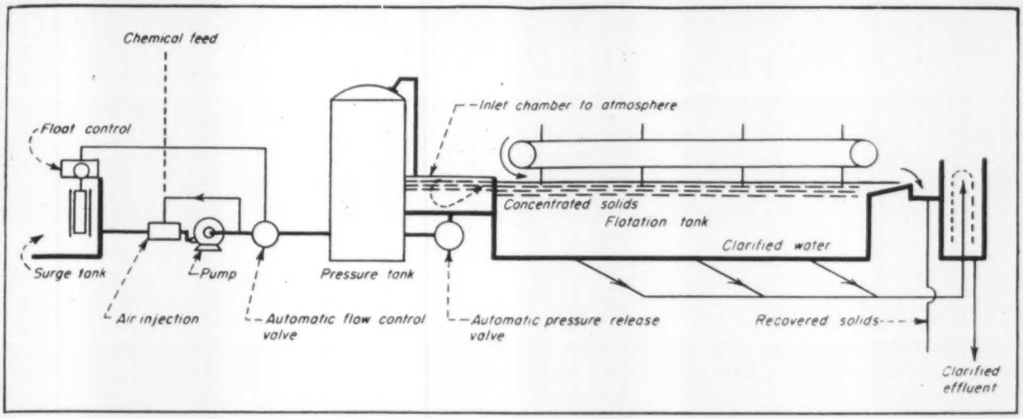


A flotation system—weaned on industrial wastes, now eager for a try on sewage . . .

Dissolved gas process floats what won't sink

COLLOIDS ARE CANTANKEROUS; air is cheap. Combining these facts, Bulkley Dunton Pulp Co. of New York came up with the Colloidair separator, tool for liquid waste treatment claimed able to float even lead—if it's divided finely enough.

The process is dissolved-gas flotation, as opposed to entrained or diffused air plus vacuum flotation, practiced for some 15 years in paper-fiber recovery and for several years in sewage and industrial waste treatment (See ENR Oct. 19, 1950, p 46 and Feb. 25, 1943, p 57).

Robert A. Baum, who heads Bulkley Dunton's engineering division, has developed the wide application of dissolved-gas flotation, dating back only to 1949. There are now 44 installations of his brain-child, handling wastes from soap manufacture, meat packing, food processing, tank-car cleaning, and cutting-oil machining processes. Now, Mr. Baum is out to prove the tool will work in mining—and in sewage treatment.

• **Pressure instead of vacuum**—Here's how it works. Liquid to be treated—with its suspended solids, colloids, greases, emulsified oils, or fibers—passes through a centrifugal pump. A small part of the pumped fluid is returned to operate an ejector on the pump's suction side, pulling in atmospheric air. The air is finely divided in the liquid by the pump's impellor.

Flow next enters a pressure retention tank where the injected air goes completely into solution. (With 1,000-gpm flow at 70 deg F, a 3-cu ft per minute air intake can be dissolved under two atmospheres.)

When flow is released through a valving system to atmospheric pressure in the flotation tank, dissolved air comes out of solution, alongside and even within particles of suspended solids. The air rises in very fine bubbles, causing no turbulence but carrying solids with it to the surface. A compact layer of solids forms, to be removed by continuous-flight scrapers.

• **Time, space savings**—Holding time in the flotation tank is 18 minutes, irrespective of flow volume. Low time requirement for separation of solids means less chance of undesired bacterial action in the sludge removed.

The prefabricated steel flotation tank, 5 ft 7 in. deep, comes in capacities 0.36 to 1.725 mgd; its plan dimensions are 23¼ x 7½ ft to 45¼ x 12 ft. Its relatively small size and low weight makes it suitable for indoor installation without undue foundation construction.

Where the waste to be treated warrants it, coagulants are used—usually alum, sometimes activated silica. These can be injected along with the air on the suction side of the pump.

Clarified effluent is removed continuously from the bottom of the flotation tank through tubes having adjustable-height risers on their outer ends. Adjustment of these risers determines rate of effluent flow and thus sets surface level within the flotation tank. The surface can be set so that scrapers removing floated solids take solids only from the very top, the driest layer.

Such selective removal of sludge is claimed able to remove solids at a concentration four times that possible by conventional sedimentation. This is an important factor whether the solids are wastes to be disposed of or materials to be returned to process.

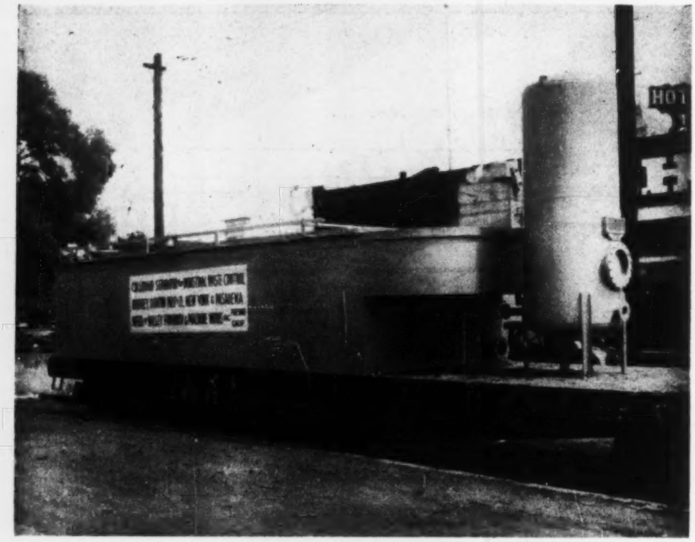
• **Case histories**—Tank-car cleaning operations of the Santa Fe Railway produce a waste that used to be treated in six 40x40-ft sedimentation basins, 10 ft deep, before discharge to the Los Angeles River. Now, a single Colloidair, 23¼x7½ ft does the job.

Also in Los Angeles, Lever Brothers' new soap plant uses four units (two 125-gpm, a 1,500-gpm and a 2,000-gpm). These clean up the waters containing fats and oils. Oils in concentrations of 200 to 300 ppm are stripped from the water which then goes back to the cooling tower or to waste disposal. Efficiency surpasses 90%.

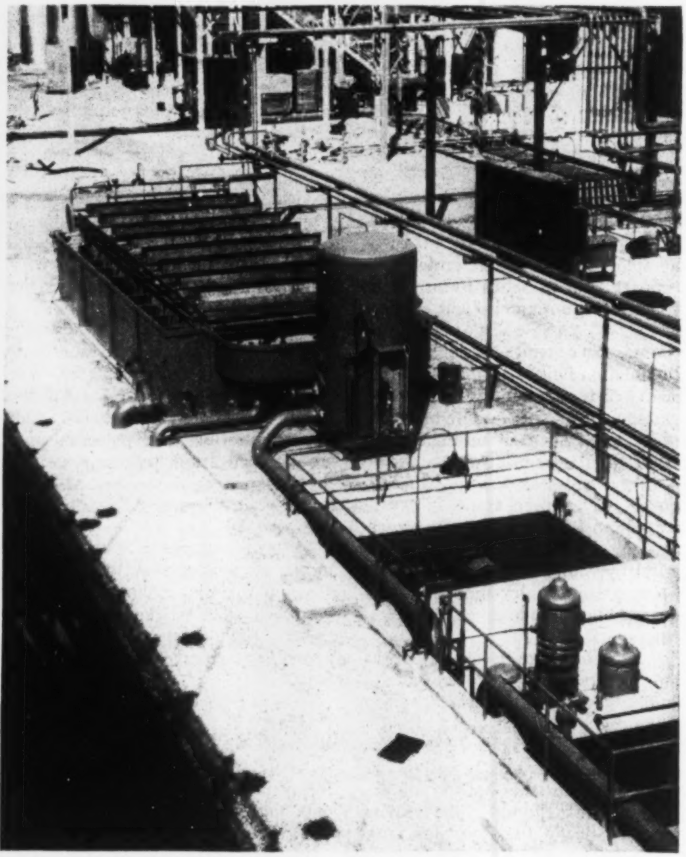
Water is precious in Southern California, so it is noteworthy that this clean-up before cooling and reuse keeps daily (24-hr) demand down to about 550,000 gal in a plant first figured to require many times that flow.

In a meatpacking application, Luer Packing Co., Los Angeles, reclaims and sells 90% of the greases in its waste water and no longer has to pay for periodic cleaning of city sewers. One meat-packer boasts a Colloidair with 98% efficiency; 90% is typical.

In paper-making, the device is claimed to do a better job than vacuum processes long familiar to the industry. Colloidair catches clays and



FLOTATION TEAM (FOB)—Pressure tank (right) where injected air is dissolved: flotation tank (left) where air comes out of solution to float suspended solids.



SOAP PLANT INSTALLATION is an oil and grease separator. Water used in soap making is thoroughly cleaned, then reused. Saving in water demand is significant—especially at this Southern California industrial plant.

pigments of coated papers as well as fibers which it returns to process dry enough for direct reuse.

A Chrysler Corp. application in Detroit reduces emulsified cutting-oil in waste water to 10 ppm residual oil.

• **Next, sewage treatment**—There are lots of towns and cities with grease problems at their sewage works, traceable usually to local industries. It is in such a set-up that its proponents hope first to demonstrate effectiveness of Colloidair in a municipal installation. They claim higher efficiency on suspended solids and greases in primary treatment; less space required; lower capital costs.

A fertile field is seen, too, in arid agricultural areas where industries pumping waters from deep wells can clean them up enough after use to pass them along to the farmer—along with half the cost. At one such installation, a paper mill in Pomona, Calif., industrial water pumped from 500-ft wells at 6 cents per 1,000 gal is sold after use and treatment as irrigation water for 3 cents per 1,000 gal.

Third big potential field for Colloidair may be in copper mining, where there is already an ore beneficiation process claimed 99% efficient. Bulkley, Dunton wants to see what it can do on the other 1%. (And in copper wastes, Connecticut State Water Commission recently estimated that Naugatuck River carries away 1,000 tons of copper—half a million dollars worth—each year from its valley's brass industry.)

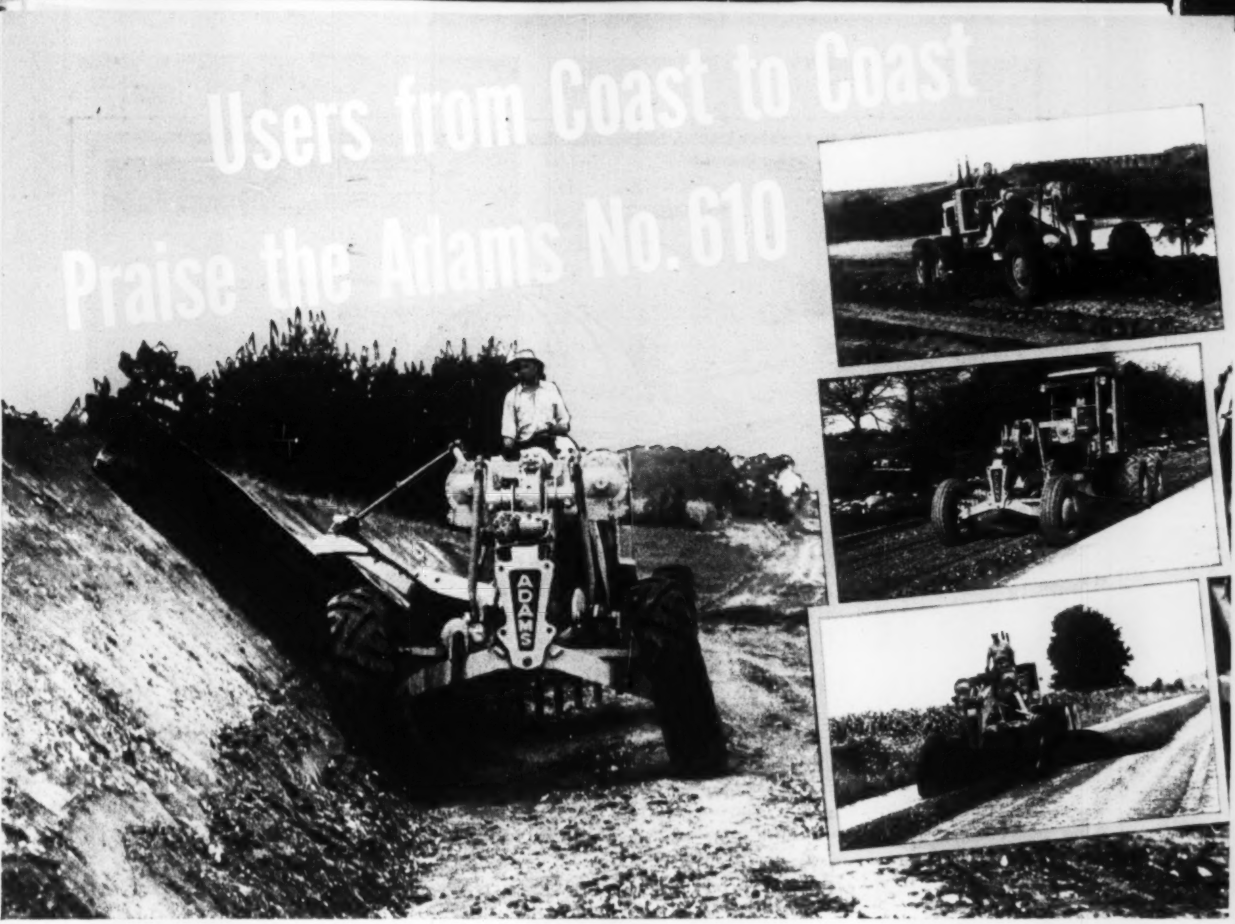
• **Special applications**—The dissolved gas used in the process is not necessarily air; air just happens to be the cheapest of those used. If, however, flotation is desired in an industrial process that uses some other gas for some other purpose, that gas can do the floating work. In winery operations, it's sulfur dioxide; in beet sugar, it could be carbon dioxide. Solubility is the deciding factor generally in choosing a gas for a given liquid.

A-bomb shelter study shows alterations need

Potential American target cities now can provide protection from atomic bomb attack in existing buildings for only two million persons during working hours, the Federal Civil Defense Administration estimated recently in announcing publication of a manual to assist cities in making block-by-block surveys of shelter areas.

But shelter for fifteen million more can be found in present structures if alterations are made.

FCDA's manual is Part I of a technical guide titled, "Shelter from Atomic Attack on Existing Buildings".



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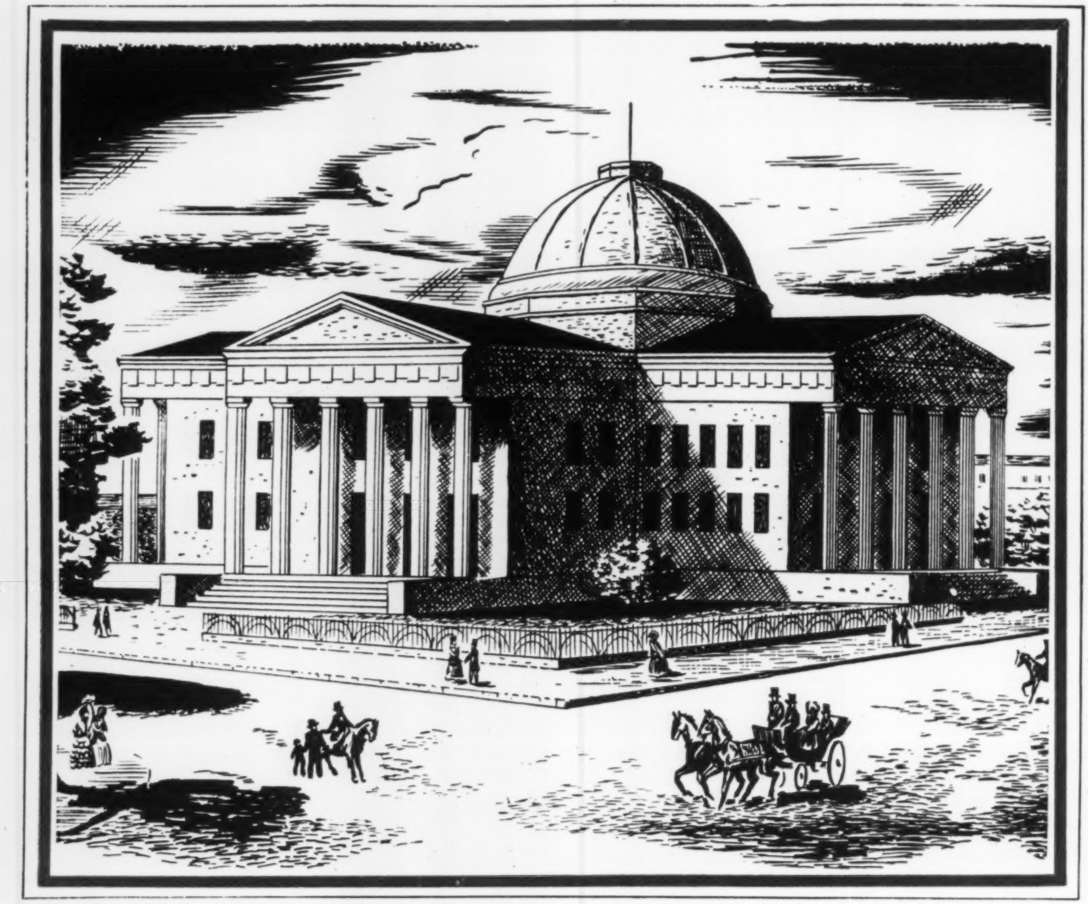

The old courthouse in St. Louis as it looked 100 years ago

St. Louis, Missouri has a cast iron water main in service that was installed more than 100 years ago. That is not surprising as St. Louis is one of our oldest cities, founded by the French and taken over by the U. S. A. with the Louisiana Purchase. Yet this old main is still withstanding the traffic shock and beam stresses imposed by multi-ton trucks and congested underground utility services in a great manufacturing city. More than thirty other American cities have cast iron water and gas mains in service that were installed over a century ago—indisputable testimony to the strength factors of long life inherent in cast iron pipe.

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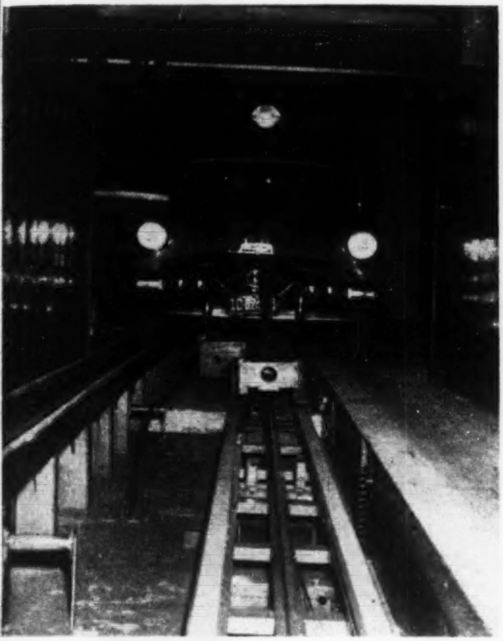
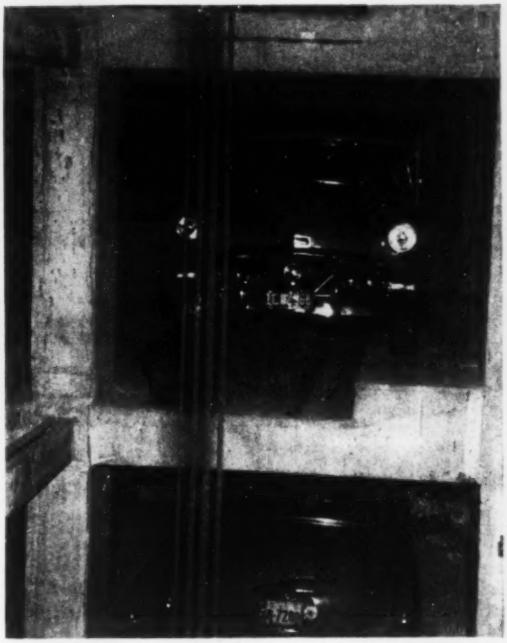


START—As car is driven up to elevator in Washington, D. C., parking garage a positioner resembling a shoe-fitting device rolls under the car, grips the bumpers and pulls it in.



FINISH—At an upper level auto is rolled into a parking stall by the same device, which then retracts into the elevator and moves to a different floor to pick up another car.

Parking garages go automatic

Mechanical devices being used in new multistory parking garages may have a tremendous impact on the economics of garage construction and operation. Some of these ingenious machines are designed to speed up movement of cars from garage entrance to parking stalls and back. Others also make possible greater utilization of space in the building for parking. In either event, they cut parking costs—and ease the parking problem.

Building designers will have to adjust their thinking accordingly. They will have to plan future garages to employ such installed equipment at maximum efficiency and to achieve the highest possible ratio of net parking area to gross floor area. Furthermore, they may have to discard conventional construction in favor of designs that fit more economically with these mechanical devices.

• What the machines do—There is a garage in Beverly Hills, Calif., for example, that is practically all steel. Most of the floor at each level is made of sheet metal, prefabricated in large sections to simplify erection.

To increase the useful-floor-area ratio for this garage, ramps were made movable. Activated by a pushbutton, the ramps rotate up to permit cars to pass by; another press, and down they come to let cars up to the next floor.

A garage in Washington, D. C., is an example of how a mechanical device speeds parking. It employs a hydraulically operated version of the shoe-fitting stick. This car positioner draws a driverless automobile into an elevator, which carries both to an upper story. The positioner then pushes the car into the proper stall. Similarly, it returns the car, when desired.

Then, there is a garage in Des Moines, Iowa, with elevators that can travel horizontally as well as vertically—and can do both simultaneously. By raising automobiles to the proper level and lining them up with the correct stall, the elevators speed up parking time considerably over that required in ramp-type structures.

• Garage design problems—Development of such mechanical devices is being spurred by a desperate need for more parking space in nearly every community in the country. In many cities, parking meters are being installed on city streets; vacant lots are being converted to parking areas; and often, old buildings are torn down to provide the vacant lots. Yet, parking space continues scarce. It seems that the easier it becomes to drive into town and park, the more drivers are encouraged to drive in.

Greatest need for parking space is in the heart of town—and that is where real estate is most expensive. As a result, parking lots or one-level garage buildings frequently are uneconomical where they are most needed. So multistory structures have to be built.

When parking levels have to be built above or below street level, however, complications set in: Space must be provided for getting to those floors. Time is consumed in traveling to upper levels; this may discourage customers or make operation of the garage uneconomical because of the high cost of attendant parking. Danger of damaging cars in moving them about increases.

• How to cut garage costs—All sorts of schemes have been presented for solving these problems.

For ramp-type buildings, space has

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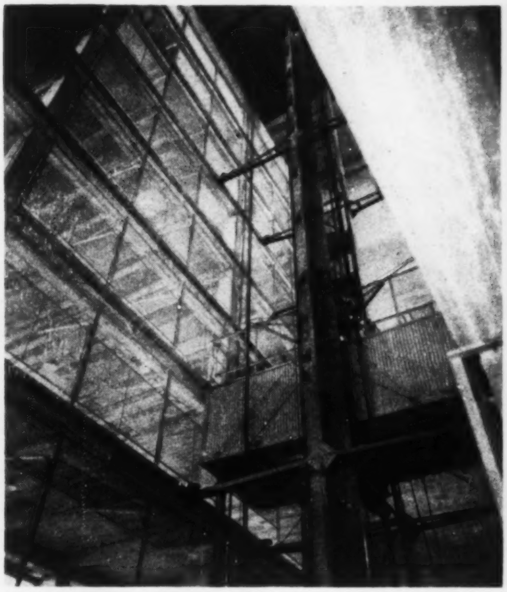
CONCRETE GARAGE in Des Moines, Iowa, has an elevator well extending the length of the building.



PARKING STALLS are served by elevators that move horizontally as well as vertically. (Business Week photo)

been conserved heretofore by making ramps steeper, using two-way ramps or employing part of the ramp areas for access to parking stalls. In some cases, two one-way spiral ramps are arranged like the threads of a double-threaded screw. Thus, two ramps occupy no more floor area than one spiral ramp would. The Battery Parking Garage in New York City is one of the latest examples of such an installation (ENR May 18, 1950, p 44).

Some ramp garages are of the split-level type; successive floors are only a half story apart. Some have inclined floors. Both types aim at shorter ramps for a given maximum slope (15% generally is considered maximum desirable).

Latest example of a space-saving design for a ramp garage is the movable-ramp structure in Beverly Hills, which will be described later.

Least space required for moving cars from one level to another is that taken up by elevators. Conventional elevators, however, have a high initial cost, and some expense is involved in operating and maintaining them. Also, for garages with heavy peak loads, they may be impractical because of limited capacity.

The garage in Washington, D. C., with the car positioner, and the one in Des Moines, Iowa, with the horizontal-traveling elevator, are two of the latest examples of designs to improve the ability of elevators to handle peak loads. These particular designs also have the additional advantage of eliminating aisles, or other floor areas needed in ramp garages to provide access to parking stalls. (Ramp garages in addition may have to provide elevators for transporting drivers to and from parked cars.)

• Movable-ramp garage—To get back to the Beverly Hills garage—this three-story, 152 x 156-ft concrete structure cost $427,000, parks 400 cars on its four levels (see pictures on p. 62).

Parking stalls are marked off by 5-in. high steel curbs. These guide cars away from columns and adjacent autos, assuring a 2-ft clearance.

Wheel loads are carried by steel channels along the sides of the stalls. The channels in turn are supported on 5-in. steel H-columns spaced 8 ft 4 in. by about 20 ft on centers.

Flooring between the channels is 16-ga steel. Thus, a relatively large portion of the parking area is made of low-cost lightweight sheet metal. This construction is practical because the curbs prevent car wheels from riding off the channels.

Heavier metal flooring, though, was used for aisles and ramps. Prefabricated, the aisle units were erected in sections 24 ft long and 8 ft 4 in. wide. Ramp units are the same width, so that they can be fitted between aisle units where needed.

Normally used for floor-to-floor travel, ramps can be made to rotate up to permit cars traveling between aisles to pass under them. This device enables space to be made available for parking that otherwise would have to be used as a throughway.

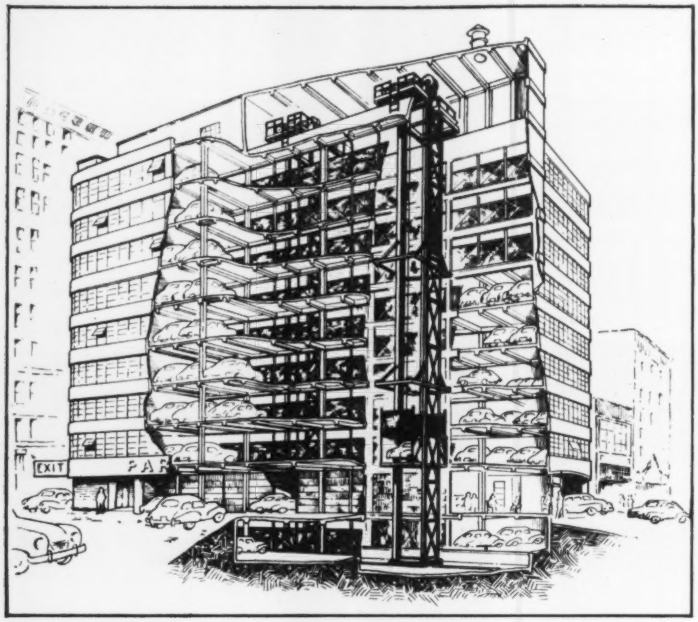
Electrically operated, ramps are controlled by pushbuttons on nearby building columns. They are so counterbalanced that manual operation is simple if the electrical system fails.

Relatively narrow guiding troughs restrict movement of cars on the ramps and thus make possible narrow, lightweight ramps. Wheel-aligning units at top and bottom of each ramp assist parking attendants in finding the troughs with both front and rear wheels. These units consist of converging steel curbs and steel rollers on both sides of a triangular traction plate.

The Multi-Deck Corporation of America, with headquarters in Los Angeles, Calif., designed the garage. It claims the following advantages:

1. Cost of the steel structure is less than for any other type providing the same number of parking decks.
2. Erection time is minimized by extensive plant fabrication.
3. Safety devices, such as raised curbs between stalls and wheel aligners on ramps, provide a maximum of operating safety.
4. Layout of the stalls, aisles and ramps is such that not more than two minutes is required to deliver cars even under the busiest conditions.

It is noteworthy that the steel floors and structural members in this building are not fireproofed. In some cities, therefore, it may be necessary to secure a variance from the building



THREE ELEVATORS operate simultaneously in the well, carry cars to proper stalls at the press of a button. Autos can be parked in less than two minutes.

code. This may not be too difficult. The only combustible materials in the building are the autos parked there, and open construction, plus ample fire extinguishers, make fire fighting easy.

The Multi-Deck system was devised by Ellis E. White, who now is vice president and chief engineer of the company. Ralph B. Austrian is executive vice president. Pereira & Luckman were architects on the Beverly Hills garage. Hillman & Nowell were structural engineers. Consolidated Western Steel Co. fabricated and erected the steel.

• Automatic parking garage—District of Columbia officials waived 22 zoning and building-code regulations to permit construction of the Washington garage. Tallest commercial building in the Capital, it is 16 stories high, parks 68 cars. It cost about $200,000 to construct.

The building has a fireproofed structural-steel frame, with concrete floors to prevent oil from dripping from level to level. Like the Beverly Hills garage, it is of open construction; it has no windows, needs no ventilating equipment. Floor-to-floor height is only 7 ft.

Snuggled between two existing buildings, into a lot only 25 ft wide by 67 ft deep, the garage has two geared-traction type electric freight elevators in the interior. At every level above the first, there is one parking stall on each side of both elevator shafts. It is never necessary to move a car to make another accessible to the parking mechanism.

Only one man—on the ground floor—controls parking. He has only to push buttons and collect parking charges.

A customer drives his car so that one wheel enters a narrow guiding trough at the garage entrance. He then stops the motor, leaves the car out of gear with the brakes off, gets a claim ticket from the attendant and departs.

The attendant presses a button on a control panel, determining the floor and stall where the car is to be parked. The elevator doors open, a dolly rolls out under the auto, two arms rotate up and press against each car bumper, and the dolly, hydraulically powered, rolls back into the elevator with the auto. The doors close, and the elevator speeds up at 250 fpm to the designated floor. There, the dolly pushes the car into the unoccupied space.

A whole cycle—from the time a car is parked to the time the dolly return for another car—takes but 1½ minutes.

If the attendant makes a mistake and attempts to send a second auto to the occupied space, a relay prevents the elevator from operating.

Arthur G. Dezendorf, president of Parking Services, Inc., owner of the garage, estimates the building cost 35% less than any other type parking garage he could have built in Washington, primarily because the double elevator shaft eliminates much wast space.

Richard L. Sinclair, of San Dieg Calif, invented the positioner. Jeffress-Dyer, Inc., of Washington, D C., built the garage. Leo Chatelain, Jr., also of Washington, D. C., was the architect.

• Elevators move diagonally—The Des Moines structure is a city-owned, but privately operated, 9-story garage, with a capacity of 430 autos. It cost $562,000. Of this, $315,250 was for construction, $146,000 for the elevator system, $75,000 for land.

Glass-enclosed, the 127x78-ft building is of reinforced concrete construction. Columns are spaced 24 ft on centers longitudinally to permit three parking stalls per bay. Floors are 4-in. thick slabs supported on beams 8 ft apart. First-story height is 12 ft, all others 9 ft 6 in., providing a minimum clearance of 7 ft 9 in.

The building might be considered to consist of two structures separated by a 20x125-ft elevator well and tied together by two end walls. On one side of the well at each level is a 20-ft deep row of parking stalls. On the other side are two rows of stalls, with a total depth of 38 ft. The rear row is used for all-day or monthly parkers.

In the elevator well are three elevators, each capable of moving horizontally as well as vertically. Each cab hangs from a 23-ton crane, which straddles the hatchway. Operating in a penthouse, the three cranes ride 80-lb rails spaced 22 ft 4 in. c to c. 108 ft above the pit. The rails rest on reinforced concrete girders supported by building columns adjacent to the elevator well.

Each elevator operates in a steel frame that moves with the crane. At the bottom, movement of the frame is restricted by a guide rail in the pit. Outriggers on the frames have roller bearing against horizontal angles at the third and seventh floors to steady them.

Pendulum action of the cabs is prevented by the cable arrangement. Anchored in the concrete end walls of the building, driving cables are reeved around grooved wheels at top and bottom of the elevator frames before being connected to the cabs. With all the wheels moving at the same speed, the cabs can't swing around.

Each elevator generally serves one-third the building. Extended cams and electric interlocks on the crane bridges prevent their bumping. If there were a collision, however, buffer springs on the framework would minimize the shock.

Maximum horizontal speed of the elevators is 100 fpm, while the top vertical speed is 200 fpm. Cranes are

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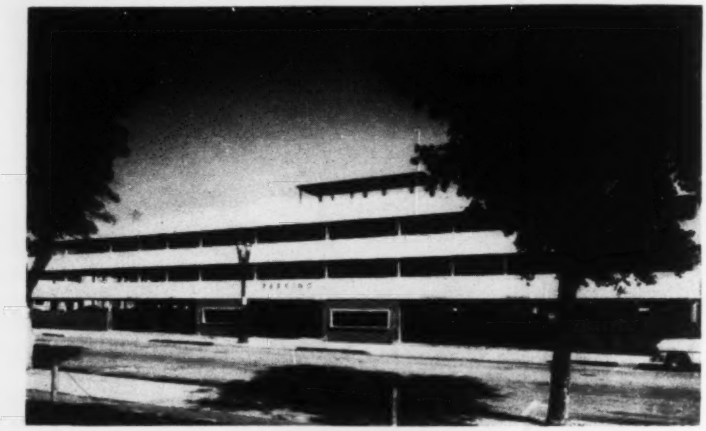
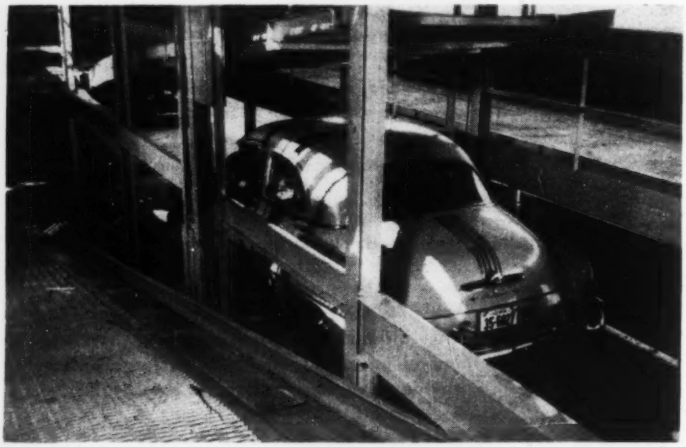


ALL-STEEL GARAGE in Beverly Hills, Calif., is of open-type construction.

FLOORS consist of large prefabricated sections made of steel sheet or plate. Note ramp in background on which car is moving to floor above.



RAMP lifts up (above car) at the press of a button to permit cars to pass underneath it in traveling between aisles to reach a parking stall.

powered by 5-hp electric motors mounted on each bridge. The 5,000-lb capacity aluminum cabs are operated by two-speed 30-hp ac motors.

An attendant drives autos on and off elevators; all other operations are pushbutton-controlled. A press of a button moves an elevator horizontally and vertically to line up with a selected stall.

Three elevator operators, one checker and one cashier can operate the garage during peak hours. A system of signal lights, indicating which stalls are occupied, controls the operation.

The garage was completed last October. The previous March, the city had completed a four-story 350-car ramp-type garage, which cost $514,000, or $1,470 per parking stall. The elevator garage cost $1,307 per stall, or $163 less. In addition, cost of operating the elevator garage is estimated to be only about 65% of that for the ramp garage.

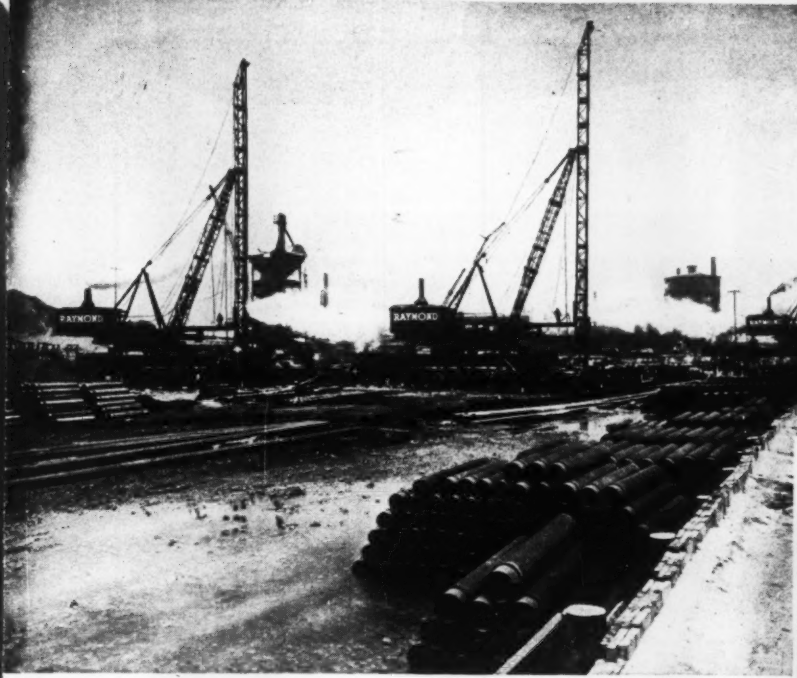
Kucharo & Associates, Inc., Des Moines, was general contractor. Bowser Engineering Co., Baltimore, Md., held the elevator contract. Dano Jackley, of Baltimore, was the architect, with structural design and construction supervision by Nemmers & Clark, of Des Moines. L. G. Howell is city manager of Des Moines; J. M. Tippee, director of public works, and Arthur Thomas, head of property management. National Garages, Inc., Detroit, Mich., holds a lease for operating the garage.

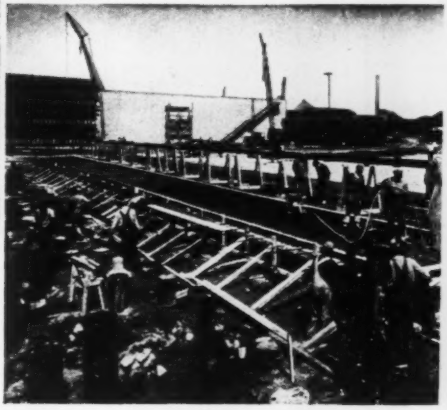
• Pigeonhole parking – A similar scheme of elevator transport has been used in Spokane, Wash. (ENR Dec. 28, 1950, p. 16). Vaughn and Leo Sanders, of Spokane, designed, and Peters Co., Portland, Ore., fabricated a steel-frame open-type garage in which cars are parked by mechanical stacking. The initial installation was three stories high, parked 142 cars.

A car is driven into a ground-floor stall behind the cashier's office, where the driver gets out, locks the doors and departs. An electro-hydraulic transfer elevator, which travels both horizontally and vertically, parks the car.

A 240-car garage is now scheduled for construction by Pigeon Hole Parking, Inc., in Sacramento, Calif. Present plans call for a 5-story reinforced concrete structure, built by the lift-slab method.

There are numerous other patented schemes afloat for automatic parking. Some inventors are having a tough time, but some are getting their designs built. If the trend continues, these mechanical parking devices will bring about a revolution in parking-garage construction.





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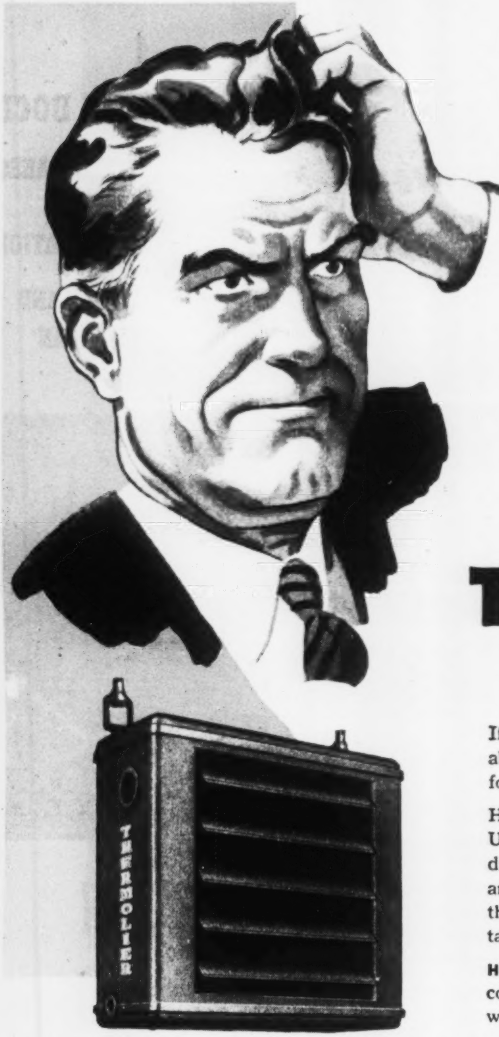

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Here's a red-hot tip. To save heat and fuel, install Thermolier Unit Heaters. But don't delay. Material shortages can seriously disrupt the production of unit heaters. In addition, skilled men are available to make installations now. They may not be in the days ahead. Study these Thermolier Unit Heater advantages — *and act promptly.*

HEATING COMFORT Thermoliers provide quick heating from a cold start. Desired room temperatures are easily maintained within a close range.

LOW FIRST COST Thermoliers are so efficient and so compact that their heating capacity is often equivalent to the capacity of cast iron radiation or pipe coils of twice the cost.

ECONOMY OF OPERATION Heat is forced down to the working level . . . not banked uselessly at the ceiling level.

ADAPTABILITY TO EQUIPMENT AND FLOOR LAYOUT Thermolier unit heating is widely used in industrial plants and warehouses, garages, stores and public buildings. The units and the simple piping are overhead where they do not interfere with arrangement of the operating machinery or equipment.

THERMOLIER CONSTRUCTION FEATURES THAT SAVE MONEY

Use of plain thermostatic trap, the simplest and least expensive kind of trap, is practical because of Thermolier's exclusive internal cooling leg.

Maximum capacity provided at all times and annoying, destructive water hammer eliminated by built-in pitch of tubes and internal cooling leg which assures continuous drainage of condensate.

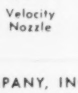
Damaging strains caused by expansion and contraction eliminated by "U" type expansion tubes.

Safety and durability assured with leak-proof tube-to-header construction.

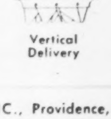
Eight other important features. Write for Thermolier Catalog.

Horizontal Delivery

Textile Model



Velocity Nozzle



Vertical Delivery

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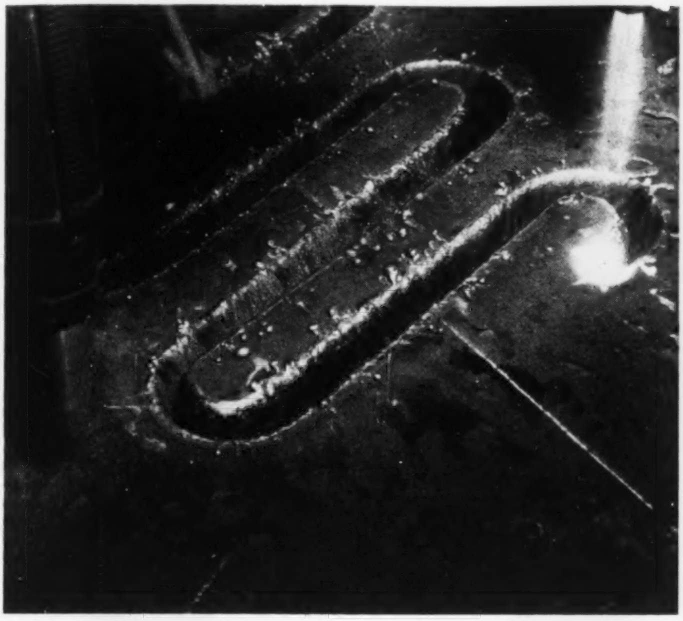
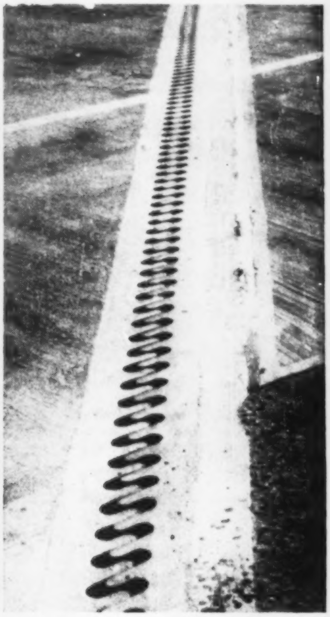


FLAME-CUTTING a steel plate to form a finger-type expansion joint for one of twelve bridges on the New Jersey Turnpike for which this design was adopted.



EXPANSION JOINT at the abutment of a bridge near Swedesboro, N. J.

Flame-cutting reduces cost of jolt-free bridge expansion-joints

In providing for expansion and contraction in bridges of the New Jersey Turnpike, meticulous attention was given to avoiding jolts and noise in the expansion joints to be employed. In addition, since this highway is built for years of service life, maintenance of joints had to be eliminated as far as possible, yet the initial cost of the expansion joints had to be kept in proper relation to other costs.

Where an expansion opening of less than 1¾-in. was required, an open joint was used. For greater openings, however, a special steel plate finger-type joint was specified and designed by the turnpike engineers, with the interlocking fingers lying parallel to the centerline of the highway.

This type of joint was selected as being entirely jolt-free and noiseless because the plates are set flush with the concrete surface of the roadway. The interlocking fingers are designed so close to each other, laterally, and of such dimensions and flatness that the wheels of vehicles passing over them would at no time be without adequate support. Also, they are of sufficient strength to resist wear and impact, and retain their alignment with a minimum of maintenance Finally, savings in fabricating cost were made by flame-cutting instead of machining the plates to the required form. And as compared to cast iron, it is claimed that the flame-cut steel plates are 10 to 15% cheaper in addition to providing the greater strength, resiliency and design flexibility of steel plate.

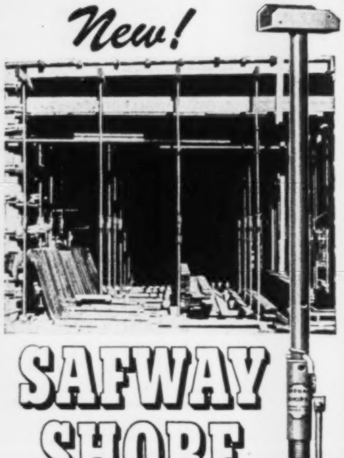
The joints for 12 of the turnpike bridges at the southern end of the route were produced by Belmont Iron Works, Philadelphia, Pa., one of the structural steel fabricators. To manufacture these joints, Belmont called upon By-Products Steel Co., a division of Lukens Steel Company, Coatesville, Pa. Belmont had worked with By-Products before, and both firms had extensive experience in producing expansion joints on similar projects.

Unusually large joints of another design, although of a similar type in flame-cut steel plate were used with success on the Peace River Bridge of the Alaska Highway. These joints are 3 in. thick and have 18 in.-long fingers. In contrast the Turnpike bridge joints average approximately 6 in. in length to suit conditions of a more clement temperature range of −20° F to a maximum of 120° F, and the joints are lighter in gage and weight.

Since the fingers had to be parallel to the centerline of the roadway, slightly different designs were required to correspond to the various angles of skew at the 12 bridges. As a consequence, 12 electronic tracing templates were made up, from as few as three flame-cut sections to as many as 14. Sections were spliced by welding.

To offset the possibility of warpage in flame-cutting these narrow sections, a fixture was made from a large plate into which the single plate width was wedged at numerous spots along the length of the joint. This decreased plate movement so that the one cut could be made to the close tolerances required for proper clearance of fingers when installed. A special torch tip assured the proper width of cut. Care was exercised in lining up the torch with the plate so that the ends of each section would line up properly when spliced. Scribing a centerline on the plate facilitated this operation.

After cutting, plates were sent to the flattening press where matching pieces were straightened as a unit to a tolerance of ⅛ in. in 10 ft, thus assuring that fingers would fit into the corresponding wells with a clearance of ¼ in. on all sides. Any finger warpage was corrected by localized heating and wedging to insure the proper gap and flatness.



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SAFWAY SHORE

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- ★ Micro-Adjustable
- ★ One-Man Operated
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Substantial time and money savings can be realized on all your shoring jobs by using the new SAFWAY SHORE to support forms for concrete slabs, beams, columns, walls, tunnels, etc.

Heavier load-carrying capacities to 9,900 lbs. permit wider shore spacing, reducing the number of shores needed, erecting and dismantling time. Shores are easily carried, positioned and adjusted by one man. These profitable *Safway* advantages help complete jobs faster:

NO NAILING REQUIRED — In most cases, if upright. U-shaped head plates seat 4 in. or lapped 2 in. lumber.

FAST ADJUSTMENT — Upper member is extended to approximate adjustment and fastened with pin . . . then sleeve nut is rotated, elevating head to exact height required.

NO BRACING NECESSARY—At heights to 12 ft., under most conditions. Bracing brackets available for greater heights.

ONLY 3 SHORE SIZES— Cover a range from 6 to 15½ ft. above mounting surface. Each size permits a 5 ft. adjustment range.

PROTECTED THREADS—Sleeve nut covers threads during transportation and storage, protecting them from damage, rust, concrete, etc.

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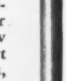
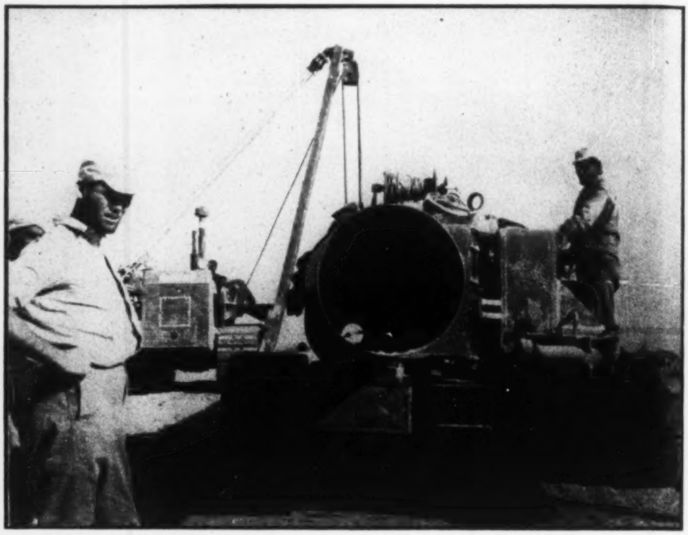


INTERNATIONAL



BENDING THE PIPE—N. Ryder, left, and M. MacMorrow, bending operator, at work with a portable bender—Bechtel photo.

Near East pipeline adds 300,000 bl a day to the oil supply of the free world

The free world's oil supply will soon be increased by well over 300,000 bl. a day. This will be upon the early completion by the Arabian Bechtel Co's task of building a 556-mile, 30-32-in pipeline from Kirkuk, Iraq to Banias, Syria, for the Iraq Petroleum Co.

Field work on the project got under way in the fall of 1950, just as the Trans-Arabian pipeline was being completed. It was then that a corps of seasoned Bechtel veterans of pipeline work in Saudi Arabia and Kuwait went into action in Syria and Iraq.

• 100 American experts—There were 50 Americans in the group at the outset. Later that number was doubled, while about 200 British experts were recruited by George Wimpey & Co. Ltd. There were 2500 Arabs on the payroll, and an equal number supplied by local labor subcontractors.

The right-of-way runs southwesterly from the Kirkuk oilfield some 130 miles, crossing the Tigris and Euphrates rivers, then striking westward over the Syrian desert to its highest point about 90 miles inland. Thence it passes through hilly country northwestward to Banias, Syria, where the new line has its outlet on the Mediterranean. This final section is of 26-in pipe, the balance being 30-32 in. There were 23,000 tons of the 26-in pipe manufactured by the National Tube Co., Lorain, Ohio. The larger pipe was fabricated at the Maywood, Calif., plant of Consolidated Western Steel Corp. It totaled 160,000 tons.

The 26-in line was laid first. Work on it was hampered by heavy rains which turned the right-o-way into a quagmire in the winter of 1950-51, but the line was completed within a year. Meanwhile the 30-32 in pipe was being triple-jointed into 90-ft lengths and trucked to the right-of-way across the desert. In the winter of 1951-52 rain, snow, frost and mud plagued the pipeliners but the work continued unabated.

• Built ahead of schedule—The new pipeline is now practically finished, almost exactly 18 months after groundbreaking and six months before the date scheduled.

The work of the Arabian Bechtel Co. on this project was carried out under the general direction of Van W. Rosendahl, chairman of the board, and John M. Rogers, president. Local supervision was by Clark Ronkin, executive vice-president, with James Leaver as project manager, assisted by

(*Continued on page 70*)

STOP RUST!

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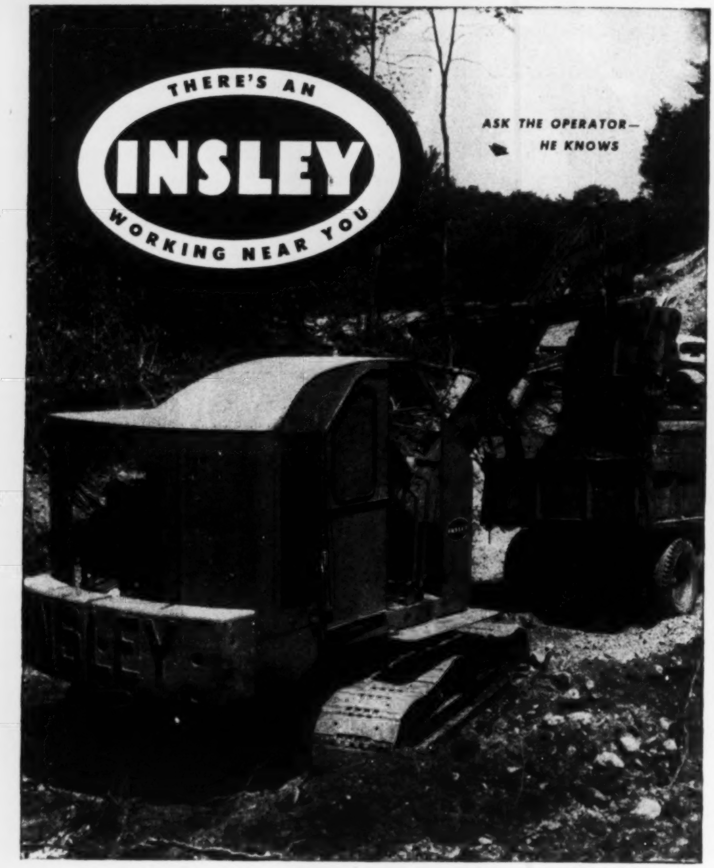

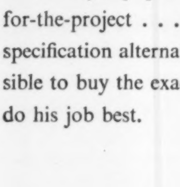

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that Insley Equipment can be rated-for-the-project . . . he knows that specification alternates make it possible to buy the exact equipment to do his job best.

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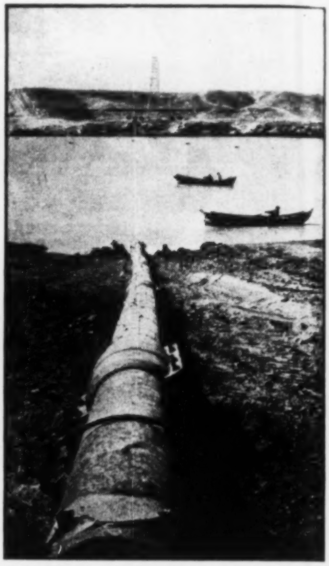


UNDER THE EUPHRATES—View from the eastern side of the famous Euphrates River, showing the first 16-in. line in place —Bechtel photo.

A. M. Berlander, Roland J. Ross was administrative manager, and Harry F. Waste, project engineer. Pipe laying was superintended by Roy C. Middleton and Joe James.

Long tunnel in Lyon is opened for traffic

The Croix Rousse tunnel, one of the longest in Europe, was inaugurated and opened to motorists April 20 in a ceremony at Lyon, France, attended by Premier Antoine Pinay, Minister of Public Works Andre Morice, and Edouard Herriot, President of the National Assembly and Mayor of Lyon.

The tunnel is more than 1,800 yards long and will enable motorists to by-pass the crowded, narrow streets of the central part of Lyon. New bridges over the Saone and Rhone rivers provide access to the tunnel at either end.

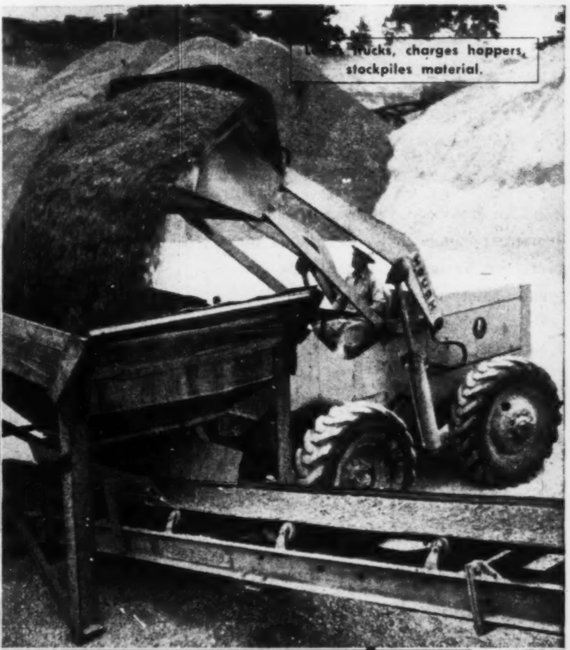
The tunnel carries four lanes of traffic. It was started 12 years ago and cost $4,300,000. French officials claim it is the longest tunnel on the continent and the longest in Europe with the exception only of the tunnel under the Mersey in Liverpool.

Lyon is the third city of France (pop. 507,000). It is at the confluence of the Rhone and the Saone rivers.

(*Continued on page 74*)

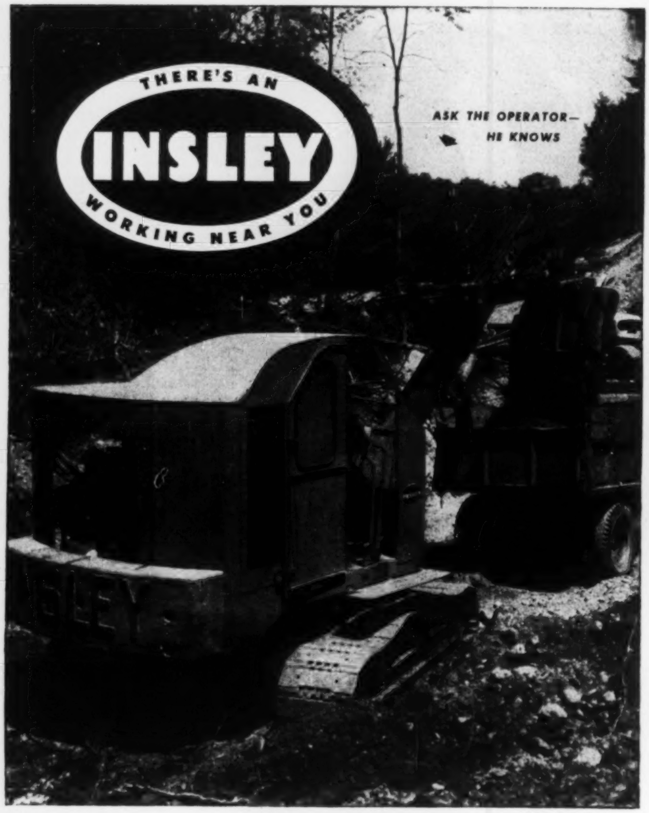
VERSATILITY *on the job!*

Traction and digging power for profitable excavating.


Loads trucks, charges hoppers, stockpiles material.

Bulldozer, crane hook and lift fork attachments available.

Sewer contractors find many jobs for "PAYLOADERS."



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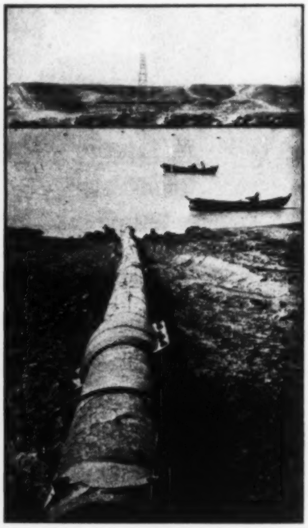

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(*Continued on page 74*)

Complete Seating Contact!

You know you've got it with . . .

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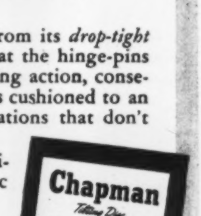
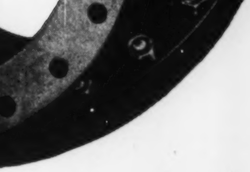
Exclusive TILTING DISC Check Valve

Nothing can "unseat" the disc-ring of this valve from its *drop-tight* contact with the body-ring . . . because clearance at the hinge-pins means that this contact is *complete.* There is no sliding action, consequently no wear, no leakage. And the pivoted disc is cushioned to an easy, silent closing . . . without slam . . . in installations that don't have unusual piping arrangements.

What's more, hydraulic laboratory tests at a top engineering school prove that the specially designed disc and streamlined valve-body reduce head loss as much as 80% under conventional swing-type check valves. See the graphs of these tests . . . and illustrations of the unique construction features of Chapman Tilting Disc Check Valves . . . in Catalog No. 30 (yours for the asking). *Write.*





Cross-section of the Chapman Tilting-Disc Check Valve. A feature of the design is that the disc seat lifts away from the body seat when opening, and drops into contact when closing, with no sliding or wearing of the seats.

THE CHAPMAN VALVE MFG. CO.
INDIAN ORCHARD, MASSACHUSETTS

MOBILITY *to the job!*

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The hundreds of Model HM "PAYLOADER" owners are real proof that this unusual tractor-shovel is a money-maker. Many owners are repeat buyers and some have fleets of six or more.

Why is the Model HM a money maker? First, it gets to the job *quickly* under its own power — over street, highway or ground — eliminates the time and expense of trailers. Second — it masters many different jobs — excavates, loads trucks, carries, bulldozes, grades, spreads, strips, backfills . . . acts as a mobile crane . . . is excellent for drawbar work and for many types of material handling. Third — it gives crawler-like traction on the job, yet works on pavements without damaging them — as well as on earth, sand, rock, mud or snow. Fourth — it maneuvers fast and easily — thanks to four speeds reverse as well as forward, plus power-booster steer. Fifth — double-acting rams raise and lower the booms, dump and close the bucket, exert tons of down-pressure for tough digging conditions.

See this big 1½ yd. "PAYLOADER" in action and you'll understand how it has sold itself to hundreds of contractors, large and small. See what it can do for you. The Frank G. Hough Co., 772 Sunnyside Ave., Libertyville, Illinois.

Write *for full information on the 1½ yd. 4-wheel drive Model HM, the 1 yd. 4-wheel drive Model HR, or any of the five other "PAYLOADER" sizes down to 12 cu. ft. capacity. No obligation.*

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VERSATILITY *on the job!*

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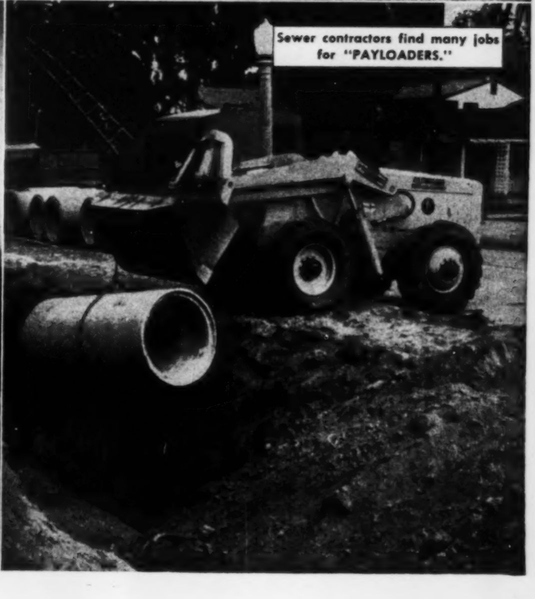
or profitable excavating.

rucks, charges hoppers,
stockpiles material.

Bulldozer, crane hook and
lift fork attachments available.



Sewer contractors find many jobs
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WOOD
RESISTS
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if it is
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CZC (FR)® Wood

Send for Booklet G28 which tells how structures can be built with wood for protection against fire hazards—to offer greater safety to contents and people.

KOPPERS

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Wood Preserving Division
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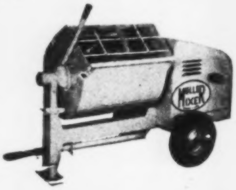
CONTRACTORS—save money!
Mix plaster and mortar in a MULLER 3 FOOT MIXER



• An investment that will give you better plaster and mortar at far lower costs than old hand methods. Ideal for both inside and outside use. Holds full bag batch of most mixtures.

PRICE $312 (with electric motor)
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FOB Metuchen, N. J.

Also available in 6, 9 and 12 cubic foot sizes

Write for name of nearest distributor

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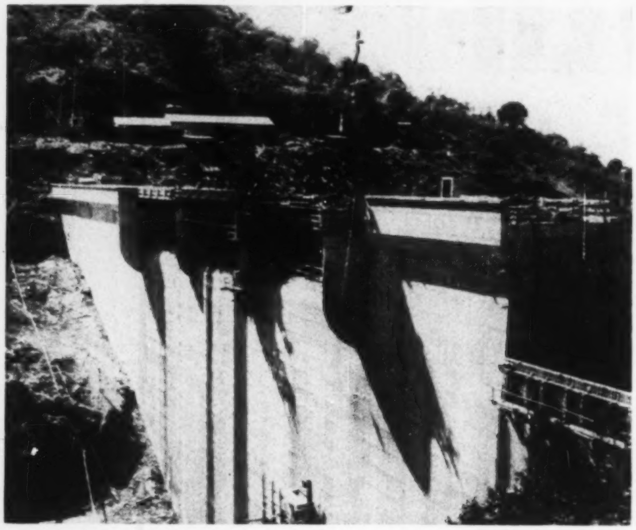
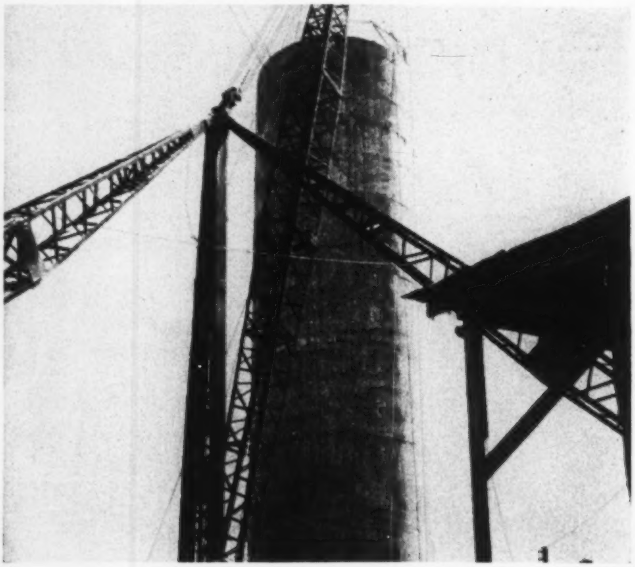
Puerto Rico water project is shaping up



YAUCO DAM—This dam, the $3-million key to the $26-million Southwest Puerto Rico project, has reached its full 178-ft height in about a year since concrete work began. This is one of five major and two lesser dams to store northslope water diverted by tunnel through the mountains to Southwest Puerto Rico's arid but potentially fertile Lajas Valley. One 12-mile tunnel in rock connects Yauco with Rio Loco reservoir where the surge tank below is built to protect a hydro-electric plant—one of two in the system. For details of the scheme, see ENR Nov. 4, 1948, page 6.



("International" continued on page 77)

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Construction
Machinery
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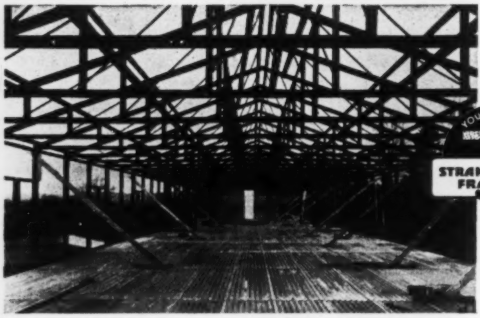
For Roof Systems . . . Floor Joists

Specify Stran-Steel® Framing

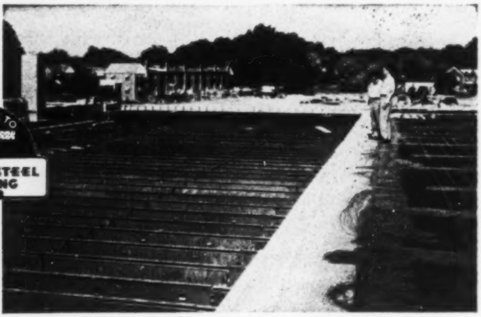
Stran-Steel framing members bring twofold savings when specified for commercial and industrial construction. There's the initial saving of time and money during construction—and the permanent saving over fire hazards. With Stran-Steel roof systems and floor joists, the destructive effects of fire can be reduced to a minimum.

Stran-Steel framing is easily adapted to modern design, has great rigidity, and is precision pre-cut for rapid assembly. The nailable feature of Stran-Steel framing allows a wide choice of collateral materials and speeds building close-in. Interior work can proceed before exterior completion, thus saving delay in sub-trade work.

Write for complete literature and specifications data on Stran-Steel framing; or see Sweet's Architectural or Builders' files.



Non-combustible Stran-Steel framing members were used for exterior walls, interior partitions, roof trusses, and floor joists in New York State Conservation Department building at Sherburne, N. Y.



Virginia Square Shopping Center in Arlington County, Va., uses Stran-Steel joists on the first and second floors and roof. Roof construction includes poured Pyrogyp deck plus built-up roofing.

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NATIONAL STEEL CORPORATION

PRODUCER OF NAX HIGH-TENSILE STEEL

International briefs

More steel for the free world—The Mutual Security Agency has announced that operations just begun in the new steel slabbing and blooming mill of the Royal Dutch Blast Furnace and Steel Co. at Ijmuiden, The Netherlands, will increase the steel rolling capacity of the free world by almost 500,000 tons a year. The new unit, first part of an expansion program being aided by U. S. financing, was approved more than two years ago as a Marshall Plan project. Most of the equipment was bought from U. S firms.

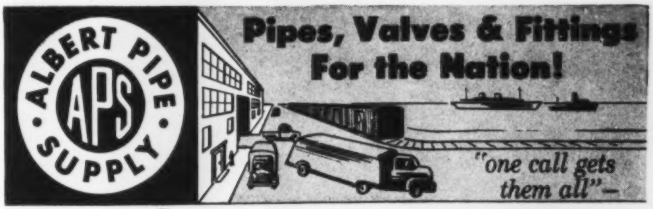
British Columbia public works—A public works program totaling nearly $40 million will be undertaken this year by British Columbia, according to estimates approved by the provincial legislature, plus $10 million more to be spent for schools. Roads will take $23 million, public building $7,730,000. The highway program will include $9 million for the Trans-Canada Highway. The government still has public buildings costing $6,272,433 under construction.

Puerto Rican slum clearance—Plans to accelerate the slum clearance program and the construction of houses for low income families in Puerto Rico are now under way. N. S. Keith, director of the Slum Clearance and Urban Development division, U. S. Housing Authority, went to Puerto Rico to coordinate all plans and efforts of the various local housing agencies. Loans have been approved for slum clearance work at Mayaguez and Ponce. The agencies have built 8,200 housing units since 1938, about half of which were financed with federal funds, and about 8,000 new units are under construction.

The Snowy Mountain project—Two Bureau of Reclamation engineers, A. B. Reeves and W. A. Dixheimer, have returned from Australia where they have been assisting on the Snowy Mountain hydro-electric project, which will cost about $500 million and calls for a 20-year program in the construction of seven major dams, 86 mi. of tunnels, 490 miles of canals, and 16 power stations.

Mexican boom—The population of Mexico City has increased by about a million in ten years. A $20-million plant is being built there for the National University, and a $23-million freight terminal is being constructed for the National Railways of Mexico. Other notable increases in population

(*Continued on next page*)



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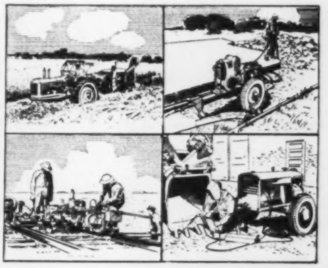

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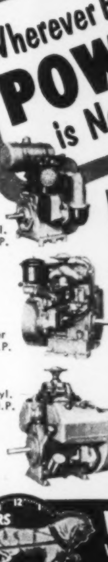

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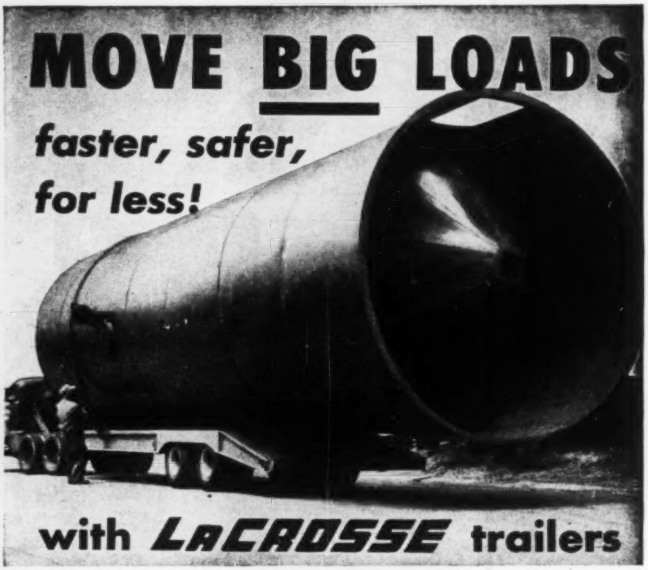

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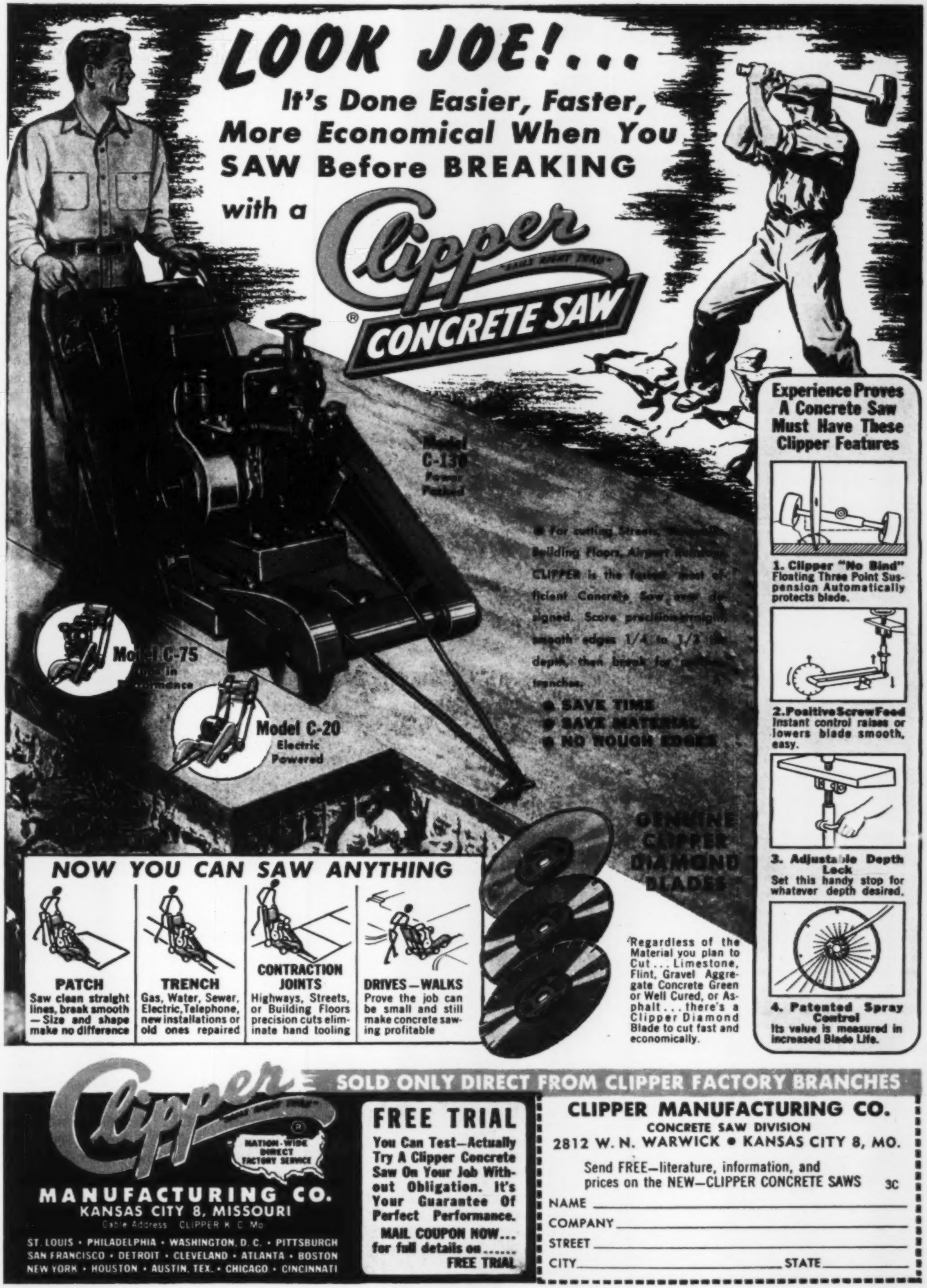
are Monterrey which has doubled in 10 years and Acapulco which has grown from 8,000 to 40,000 in 15 years. There are now about 11,000 miles of good roads in the country. The largest dam in Latin America is the President Aleman Dam nearing completion on the Rio Tonto, a branch of the Papaloapan. Behind the 250 ft structure across a mountain gorge will be a reservoir to hold six million ac ft of water. Ultimately, there will be five dams all together, enabling the storage of water sufficient for the irrigation of 1,200,000 acres.

• **More Canadian construction**—Ontario will spend $104 million on roads in the current fiscal year and Manitoba, almost $14 million. A 7½-mile pipeline has been completed near Sudbury, Ont., by the International Nickel Co. of Canada, Ltd. through which the bulk concentrate from 3,650,000 tons of nickel copper ore is being pumped annually from the newly-built Creighton concentrator to its reduction plants at Copper Cliff. The boring of a 5½-mile tunnel is about to start at Canada's $183 million electric power project at Niagara Falls, Ont. Enough rock and earth will be excavated to fill a million 15-ton diesel dump trucks. It will require two years to complete the work, and at that time an additional 700,000 hp will be available.

• **Precast concrete girders**—Modern bridge building offers many examples of steel spans assembled on land and floated into place, but the French Services des Ponts et Chaussees is probably the first to use such a procedure for large precast concrete girders. The heaviest girders were 170 ft long and weighed 185 tons, and comprised the anchor span and a cantilever arm of a new bridge over the Saone River at Saint Jean de Losne not far from Dijon. The girders were cast about 600 ft upstream, moved to barges on dollys and floated into position on the piers. For details see Annales des Ponts et Chaussees, March-April, 1952.

• **France**—The highest honor that can come to a French engineer has been conferred on Albert Caquot, whose name has been associated with many of his country's famous concrete bridges and dams. The honor is the award of the "Grand Cross of the Legion of Honor," with which goes the title of Minister of Public Works. Only one other engineer, F. Bienvenue, the father of the Paris subways, has received the honor previously.



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MEN AND JOBS

CONSULTING ENGINEER Walter L. Huber, San Francisco hydraulic and structural specialist, has been selected as the official nominee for president of ASCE. (ENR Photo by Wise)

Huber nominated for highest ASCE post

Walter L. Huber, San Francisco hydraulic and structural engineer, has been selected as the official nominee for president of the American Society of Civil Engineers to take office in October.

Huber has been a consulting engineer in private practice continuously since 1913. He has been on many boards and advisory commissions serving federal, state and local agencies. Important among these assignments was service during the twenties as consulting engineer for the California Bond Certification Commission on local irrigation projects throughout the state. Current assignments of this type include membership on consulting boards for the Corps of Engineers' Pine Flat and Isabella Dams and for San Francisco's Cherry Valley project.

He has also served as consultant for private power companies on hydroelectric developments.

In 1941 he established partnership with E. M. Knapik as Huber & Knapik, civil engineers. In recent years Huber has directed the structural design on many large projects.

This includes the four-story underground garage in San Francisco's Union Square, the Army's Letterman General Hospital and current extensions to the University of California Medical Center.

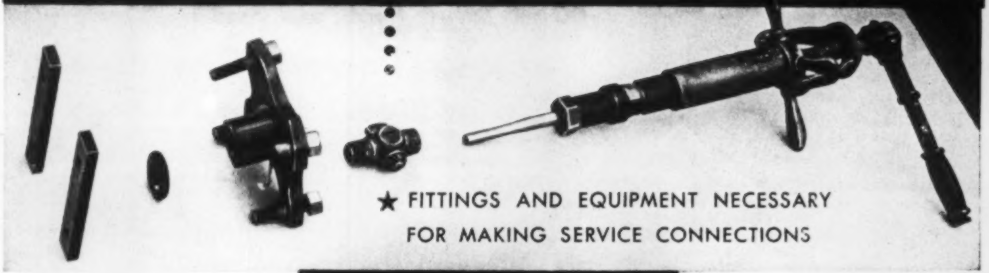
Huber's service to the national ASCE organization spans a long period of years. He served as director from 1922 to 1924 and as vice-president in 1926 and 1927. He has the distinction of being the second youngest director ever to serve on the board. Clifford H, Holland of Holland Tunnel fame, who served at the same time as Huber, was also 39 at the time of his election and was 3 months younger than Huber.

A 1905 graduate of the University of California, Huber cut his engineering eye teeth on design work incident to the reconstruction of San Francisco after the 1906 earthquake. During this period he served in the office of the late John D. Galloway, honorary member, ASCE. Before opening his own office in 1913 Huber served as district engineer for the U. S. Forest Service for 3 years.

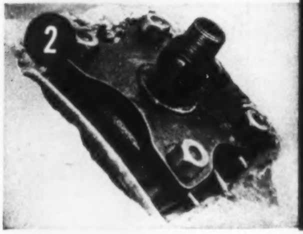
Huber's outside activities include presidency (1925-26) and directorship (33 years) of the Sierra Club, an organization devoted to mountaineering.

(*Continued on page 84*)

SERVICE CONNECTIONS are no problem in LOCK JOINT Reinforced Concrete CYLINDER PIPE


★ FITTINGS AND EQUIPMENT NECESSARY FOR MAKING SERVICE CONNECTIONS

1


2

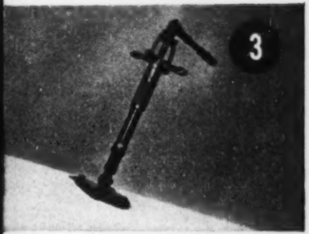
HOW TO TAP

1 Remove concrete down to cylinder in area to be tapped.

2 Assemble fittings around bars of reinforcing cage, drawing gland down firmly so that gasket fits tightly against cylinder.

3 Mount tapping drill on corporation stop and tap.

4 When tap is completed, protect steel fittings with a cement mortar encasement.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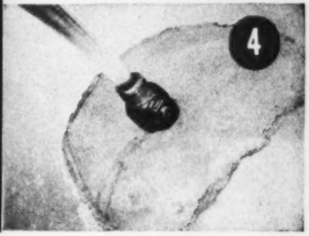
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Making a service connection under pressure in a Lock Joint Reinforced Concrete Cylinder Pipe is that simple.

Yet with these few steps a foolproof tap is always achieved. There can be no cross-threading, no loss of alignment and no damaging of the pipe with attendant costly shut-downs and repairs.

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SCOPE OF SERVICES

Lock Joint Pipe Company specializes in the manufacture and installation of Reinforced Concrete Pressure Pipe for Water Supply Distribution Mains in a wide range of diameters as well as Concrete Pipes of all types for Sanitary Sewers, Storm Drains, Culverts and Subaqueous Lines.

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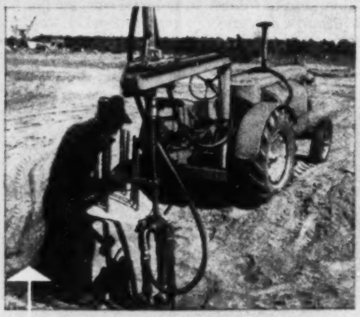

Tamping — Tractair with Le Roi-CLEVELAND Multiple Tamper and work-saving air feed keeps up with three men shoveling or a backfilling tractor. You not only get faster, easier tamping, but also better compaction and lower costs.

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with Backhoe

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Tractair-Backhoe units are saving money for contractors every day. Take John Proszek, plumbing contractor of Chicago, Illinois: He uses a Tractair-Backhoe to dig two ditches 60′ long x 6½′ deep for new home-service connections — and does in half a day what it took two days to do before!

The versatility of Tractair helps you do many jobs with greater speed and economy. Its *air power* lets you break through pavement or frost — run air tools. Its *digging power* lets you dig as deep as 7′ — cut through hard ground that a pick and shovel can't penetrate — keep the bottom of a ditch perfectly level — dig straight-end walls and square corners.

But that's only part of the Tractair story. There are other attachments you can use to multiply Tractair's usefulness and hold down your investment in special equipment. With Le Roi-CLEVELAND air tools, you can break pavement, drill rock, dig clay, tamp fill, etc. With a front-end loader (it has 8 accessories you can interchange quickly), you can load, lift, backfill, plow snow, etc.

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T-34

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Drilling, Breaking, Digging — Tractair puts air power to work running Le Roi-CLEVELAND air tools. Here, Tractair operates a clay digger, to speed up trenching. Tractair can be used also to run Le Roi-CLEVELAND breakers, sinker drills, backfill tampers.

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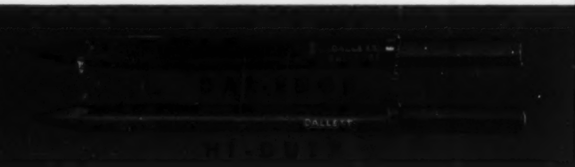

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Top engineering post goes to former assistant

Appointment of C. H. Buckius as chief engineer of Pennsylvania state highway department was announced April 16 by Secretary of Highways E. L. Schmidt.

Buckius, 59-year-old career employee of the department, was promoted to the top engineering post from his job as assistant chief engineer. The new appointment carries a salary of $13,200 a year.

Except for a brief interval to complete his formal education, and for 4 years during the Earle administration, he has been in state service since 1907. In that year he first went to work as a chairman for the highways department in his native Lancaster.

Careers . . .

• **Appointed—William E. Wheeler,** civil engineer for the Bureau of Reclamation at Hungry Horse Dam, Mont., has been transferred to the State Department for assignment in Iran, there to be construction engineer on the Teheran irrigation project . . . New senior development engineer in Portland Cement Association's Transportation Development Section is **Lawrence D. Childs,** former research engineer with the Michigan State Highway Department . . . Named to new executive posts by the board of directors of Merritt-Chapman & Scott Corp. are **Rolland O. Baum,** vice president in charge of procurement, insurance and subcontract; **Marshall G. Staub,** treasurer; **Alfred M. Heaton,** vice president in charge of New England operations and **Sherman H. Serre,** vice president

(Continued on page 87)

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The one best wire rope . . . TRU-LAY Preformed . . . will last you longer and cost less to use. Specify and get TRU-LAY Preformed improved plow steel—the rope identified by the Green Strand.

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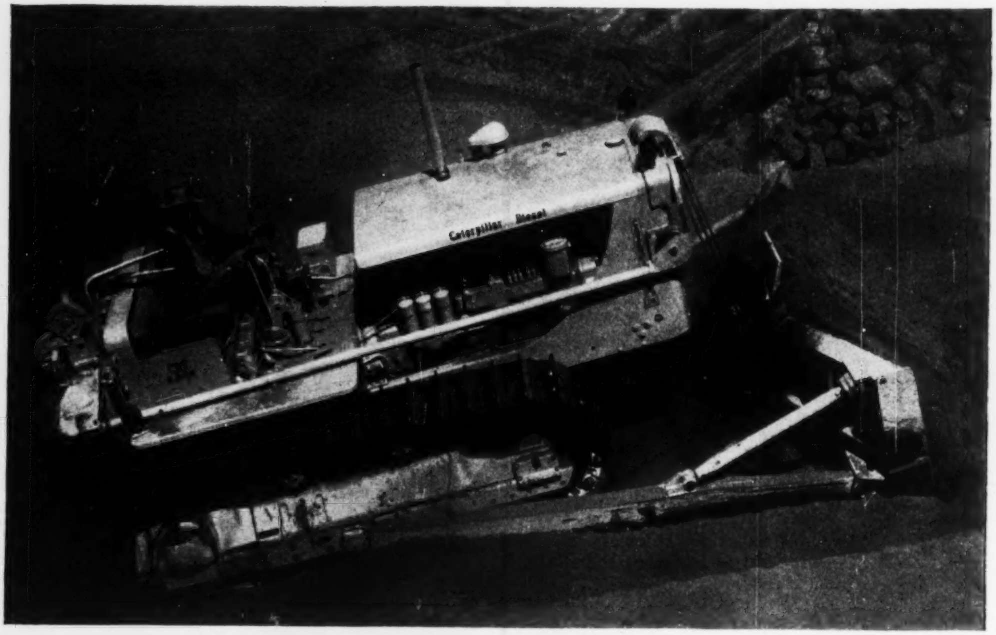

They're Building Bulldozers Stronger with MAYARI R

If this bulldozer were built entirely of carbon steel it would probably look no different than it does here. But it would not have the same brute strength or the same rugged resistance to impact, battering and abrasion as this model. Low-alloy, high-strength Mayari R makes the difference. Caterpillar uses Mayari R instead of plain carbon steel for many of the highly stressed parts.

Push arms and "C" frames on Caterpillar bulldozers, for instance, are made from channel sections of Mayari R. Spreaders, spreader fronts, reinforcement bowl sides, and moldboards are some of the parts cold-formed from Mayari R plates. With this steel, no preheating is needed for forming, and no reheating of weld zones is required.

Mayari R provides manufacturers with the versatile, economical material needed to improve designs of many types of earthmoving and construction equipment. It has a yield point of 50,000 psi minimum and an endurance limit of 50,000 psi. These properties give the steel high endurance and yield ratios, thereby permitting high working stresses. It can be used in thinner sections to reduce deadweight without sacrificing strength; or it can be used in the same gages as carbon steel to increase strength without adding deadweight.

For more information on the properties and applications of Mayari R, write for a copy of Catalog 259.

BETHLEHEM STEEL

BETHLEHEM STEEL COMPANY, BETHLEHEM, PA.

On the Pacific Coast Bethlehem products are sold by Bethlehem Pacific Coast Steel Corporation
Export Distributor: Bethlehem Steel Export Corporation

Mayari R *makes it lighter... stronger... longer lasting* of Great Lakes area operations . . . **John J. O'Toole,** former Director of Public Welfare, St. Louis, has assumed new duties as executive director of the St. Louis Housing Authority . . . **Rex S. Anderson,** Virginia District Engineer for the U.S. Bureau of Public Roads will leave that post next month to supervise road construction for Ethiopia's highway system . . . **W. G. Riddle** has joined the Kansas City firm of Charles A. Haskin, consulting sanitary and hydraulic engineers . . . New director of the Connecticut State Water Commission is **William S. Wise,** presently chief engineer for the commission . . . Under the State Department's Point Four program, **Charles B. Jones,** Guilford, N. C., is directing the digging of wells in Iran to obtain irrigation and drinking water . . . M. I. T. has conferred the doctor's degree in Sanitary Engineering upon **M. Truett Garrett, Jr.,** who recently joined the staff of the Garrett Engineering Company in Houston.

• **Elected**– Prof. **Alfred J. Perretti,** Northeastern University, Boston, will succeed **Philip N. Rugg** as president of the Engineering Societies of New England, Inc. . . . New President of the Boston & Maine Railroad is **Timothy G. Sughrue,** former executive vice-president and chief engineer of the line.

• **Honored**–For distinguished engineering achievement "in design, construction and operation of central steam power stations and industrial plants," **Reginald James Seymour Pigott** has been awarded the Gleston Medal for 1952 by Columbia University Engineering school's Alumni Association . . . Cited for "outstanding achievement" by the Oldest Inhabitants, Inc. during the recent Conference of the Negro in Business was **Archie A. Alexander,** member of the Alexander & Repass Co., engineering contractors, Des Moines . . . One of several Dravo Corporation employees to receive cash awards for entries in the Company's annual technical papers contest was **K. J. Larkin,** contracting division engineer for his paper on use of steel sheet piling in construction of river docks (ENR Nov. 1, 1951, p. 204).

• **Resigned**–Associate Traffic Engineer **M. Mansfield (Tim) Todd** of the Virginia State Highway Department's Division of Traffic and Planning has resigned to become executive secretary of the Institute of Traffic Engineers with headquarters at Yale University.

4
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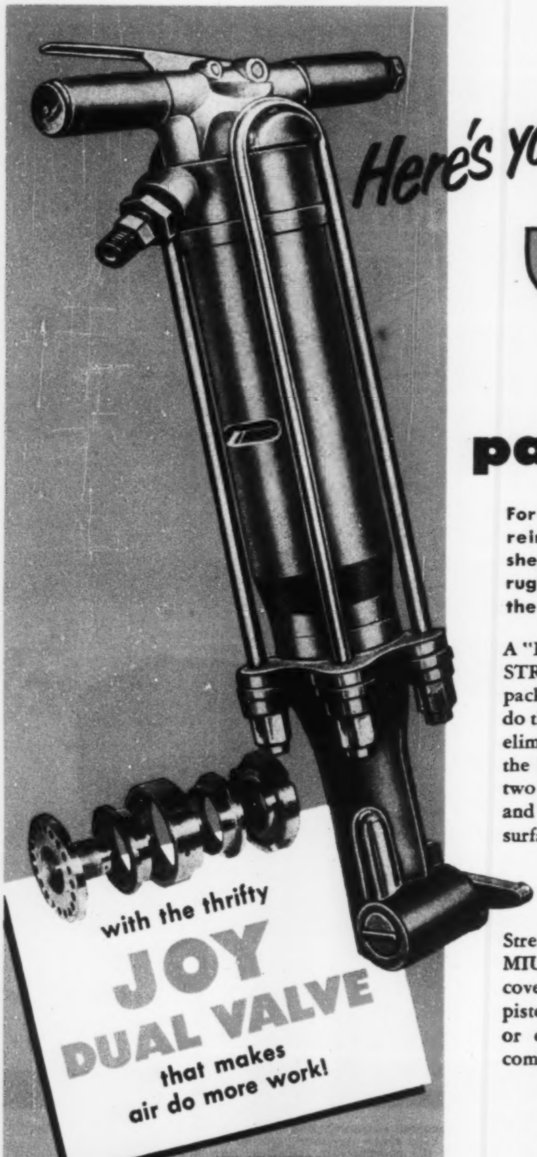

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JOY K-89

paving breaker

For fast demolition of those extra tough-and-heavy reinforced concrete sections—for driving heavy sheet piling with a driving shoe—for all your really rugged jobs . . . the K-89 Super Heavyweight gets the work done.

A "Big Brother" to the popular line of "K" type SILVER STREAK Paving Breakers, this NEW 90 lb., K-89 really packs a wallop. Although it strikes a powerful blow to do the heavy work, a cushion of air absorbs the blow and eliminates jarring and vibration—yet the full force of the blow is delivered direct to the steel or piling. The two sturdy "U" type side rods minimize side rod breakage and allow a comparatively smooth pocket or working surface for the operator's leg.

Owners of Joy K-type Paving Breakers like the interchangeability of many parts which keeps parts stocks at a minimum . . . and like all "Silver Streak" breakers the Super Heavyweight K-89 is CADMIUM PLATED inside and out with that silver-like covering which prevents rusting, eliminates scoring of piston and cylinder, and aids lubrication. ● Write today or contact your nearest Joy office or distributor for complete details about this NEW heavy-duty breaker.

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MEETINGS

Steel construction improvements predicted

Engineers and fabricators attending the National Engineering Conference in New York City April 23 and 24, under the sponsorship of the American Institute of Steel Construction, were given a preview of things to come in steel design and construction.

J. O. Jackson, vice president of Engineering and Research, Pittsburgh-Des Moines Steel Co., foresaw a bright future for steels with a higher yield point to ultimate strength ratio than present structural grades. High yield point steel can be used with greater efficiency. (Yield point can be raised by cold working, addition of alloying materials or heat treatment.)

Present AISC specifications do not recognize any materials for main members except ASTM A7, Mr. Jackson said. The specifications are inconsistent in this respect, since many structures have been built in which high-strength steels have been incorporated—bridge cables with tensile strengths over 200,000 psi and high-strength bolts for example.

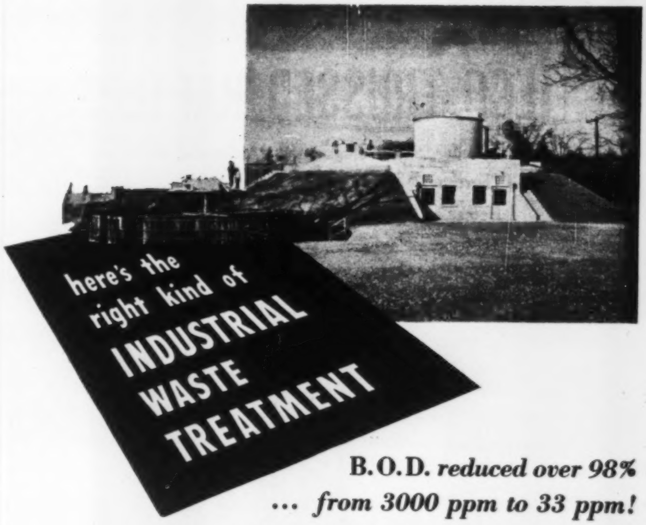
- **A revolutionary steel**—A steel has been developed (U.S. Steel Corp. Carilloy T1, ENR Nov. 30, 1950, p 78) that Mr. Jackson believes "will be revolutionary in air industry." This steel has an ultimate tensile strength of 115,000 psi, a yield point of at least 100,000 psi and is easily weldable with high-strength electrodes. Its price, Mr. Jackson said, is lower per thousand pounds of strength than A7 steel. There is also a saving due to reduced size of welds.

Lynn Beedle, assistant to the director of the Fritz Engineering Laboratory, Lehigh University, in describing tests made on rigid frames and continuous beams, called attention to the high reserve strength such structures possess. He raised the question of how advantage could be taken of this strength, which he attributed to plasticity of the metal.

Evidence indicates, Mr. Beedle said, that in numerous cases advantage can be taken of the plastic theory without exceeding permissible deflections or exceeding yield-point stress at working loads. He cautioned, however, that its use ought to await further study of certain possible limitations, principally local buckling.

Nathan M. Newmark, professor of structural engineering, University of

(*Continued on next page*)



B.O.D. reduced over 98%
... from 3000 ppm to 33 ppm!

That's the job this industrial waste treatment plant is doing at the L. A. Dreyfus Company in Oaktree, New Jersey. Installed in a residential neighborhood, the plant plays an important part in this Company's comprehensive waste treatment control plan. The flowsheet includes equalization and pre-digestion in special 30' dia. Dorr Digesters followed by the Biofiltration System using a Dorr Clarifier and a Dorrco Distributor.

There's no "cure-all" for industrial waste treatment. But there's a good chance that Dorr's diversified equipment and diversified experience can add up to the *right* kind of solution. The L. A. Dreyfus Company's installation is just one example.

● ***If you have a waste treatment problem we would welcome the opportunity to work with your consulting engineers. If you are a consulting engineer actively engaged in waste treatment, our experience is at your disposal.***

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Early in 1946 our Engineering Department was called upon to submit suggestions for 24-foot-span trussed rafters for a large project of veterans' homes. The builder intended using low-cost non-bearing interior walls and so required a roof and ceiling framing system supported solely by the exterior walls.

The triangular truss developed was a combination of 2 x 4's and 2 x 6's put together with 2½" diameter Teco split rings in overlapping joints. The trusses were placed 24 inches on centers to make the most of the inherent strength of the wood. This permitted the use of regular one-inch roof sheathing and available ceiling materials.

Since then, over 65,000 housing units have been built with Teco trussed rafters.

These economical rafters are also profitable used for commercial, industrial, church and school buildings.

Fabricators in all sections of the country are ready to serve you.

Specify timber—there's plenty of it for early delivery.

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Please send me FREE copy of "Wood Frame Teco Trussed Rafters."
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Illinois, predicted that riveted joints of higher efficiency will result from research sponsored by the Research Council on Riveted and Bolted Structural Joints. Some of these tests results may be made available this summer or fall. They will indicate the effect of rivet pitch, gage, edge distances, pattern and diameter on joint efficiency and thus will enable designers to specify better joints for various purposes.

• **High tension**—Tests on joints with high-tension bolts, Professor Newmark said, indicate that such bolts may be equivalent to more than one rivet. (Present specifications call for substitution of one bolt for each rivet that would be required.) Fatigue tests on bolted joints show that overtensioning the bolts has little effect on fatigue strength, but even joints with partly tensioned bolts have much higher strength than riveted joints, according to the tests.

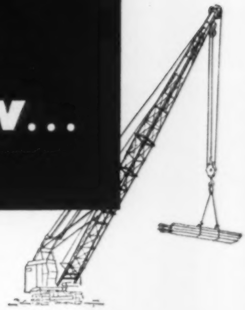
As a result of other research, it appears that bearing stresses may be increased about 30% with safety. Jonathan Jones, chief engineer, Fabricated Steel Construction, Bethlehem Steel Co., foresaw the possibility that criteria may be developed for rivet patterns and rivet sizes to permit designers to neglect bearing stresses in almost all cases likely to be encountered in ordinary current practice.

• **Current progress**—The conference was not limited to predictions of future improvements; it also considered current progress in building construction. Emil H. Praeger called attention to the complex problems encountered in erecting the United Nations building in New York and indicated how they were solved. The General Assembly Building in particular was difficult; it incorporates a tilted dome 98 ft in diameter, which is supported on a cone 104 ft in diameter, in turn carried on cantilever beams.

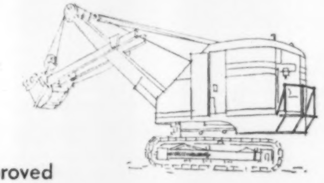
Walter H. Weiskopf, of Weiskopf & Pickworth, consulting engineers, summarized the unique design features of Lever House, new office building at Park Avenue and East 53d Street in New York City. This structure has lightweight walls and floors (ENR May 1, p 79).

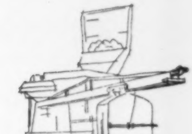
Problems of welded construction and possible solutions were discussed by a panel including Boyd S. Myers, of Robert J. Cummins, consulting engineers, Houston, Texas; W. L. Perry, Mosher Steel Co., and J. R. Stitt, the R. C. Mahon Co.

do you know...



...that you have the best, if your construction machinery is driven by Rex Chabelco Steel Chain?





It's true . . . and it's proved by the outstanding dependability and performance of this heavy duty, high strength chain. Makers of all types of construction equipment—shovels, loaders, cranes, mixers, pavers and many others—specify Rex Chabelco for only one reason: they know from experience that Rex assures them most years of trouble-free service at lowest overall cost.

You'll get added performance from your machines by insisting on Rex Chabelco for the heavy jobs of power transmission.

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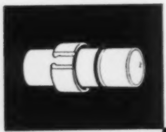
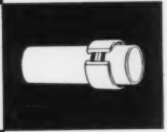
→ 3″ ←
Only this much infiltration in a 5-mile line . . .

. . . with TRANSITE Sewer Pipe and its "*packaged*" RING-TITE JOINT

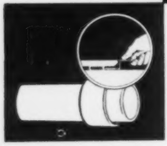
HERE'S HOW THE RING-TITE JOINT WORKS:



◄ **Start of assembly.** Two rubber rings and a Transite sleeve (cut away to show position of the rings) are placed on one of the two pipe ends to be joined.



► **Final position.** Sleeve centered over both pipe ends, with the rubber rings tightly compressed between sleeve and pipe.



◄ **Checking joint** for proper assembly. This is done with a simple gauge immediately after the joint is made . . . *before backfilling.*

The photograph above shows the total amount of infiltration—through manholes as well as pipe—in a recently installed sewer system consisting of 5 miles of 6″, 8″, 12″ and 18″ diameter Transite Sewer Pipe. So little ground water entered the system that the only practical way it could be measured was by means of a 3″ pipe inserted in the Parshall flume as shown here!

Here is visual proof that Transite Sewer Pipe with its Ring-Tite Joint cuts ground water infiltration to a minimum—in this case less than 3.4% of the specified allowable of 600 gallons per inch of pipe diameter, per mile, per day.

The Ring-Tite Joint, standard on all sizes of Transite Sewer Pipe, has other important practical advantages, too. Actually a factory-made joint, it can be assembled in a fraction of the time required for making ordinary sewer pipe joints. No jointing compounds are used—just a simple assembly operation with a mechanical coupling puller does the job. And you can check each joint for proper assembly as soon as it is made—*and backfill immediately!*

Transite Sewer Pipe may also help you save in other ways. Its long 13-foot lengths mean *fewer* joints to make—thus further reducing installation expense. And its high flow capacity (Manning's n = .010) often permits flatter grades and shallower trenches—particularly important where pipe is laid at or below the ground water line or where rock excavation is required.

For more facts about this asbestos-cement pipe and how it can save money for you, write for Folder TR-103A. Address Johns-Manville, Box 60, New York 16, N.Y.

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Johns-Manville TRANSITE SEWER PIPE

RESEARCH

Vapor-barrier paints tested by HBS

An evaluation of six types of interior paints has been carried out by Edward R. Oglio and Wm. C. Cullen of the National Bureau of Standards in cooperation with the Housing and Home Finance Agency, to determine how good they are as vapor barriers.

In building construction a water-vapor barrier is included in walls to prevent condensation that otherwise would occur when the warm, humid air from the interior of the building passes toward the outside and is cooled below its dew point.

Such condensation may cause mold, rapid decay, and with some types of insulation, serious loss in insulative properties. Where a vapor barrier has not been installed, or where it is impracticable, interior paint may act as such a barrier.

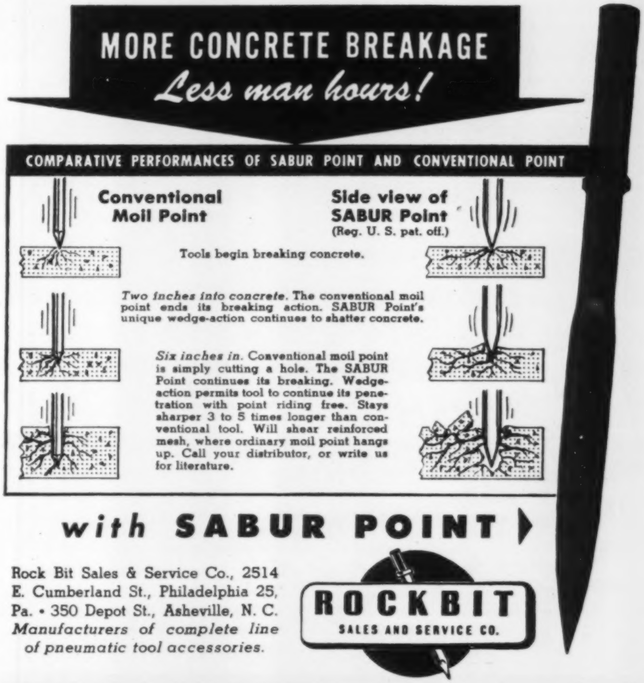
Experience has shown that, under conditions used in the tests, a paint film with a water-vapor permeance of less than one grain per sq ft per hr per in. of mercury-pressure differential may be considered a satisfactory water-vapor barrier.

In the tests, a resin-emulsion paint and a one-coat flat oil paint failed to qualify as vapor barriers.

- **Gloss enamels are good**—Washing and scrubbing tests did not cause any appreciable increase in water-vapor permeance of gloss enamel and semi-gloss enamel paints. This was true even when the film lost as much as 25% of its thickness by abrasion during the cleaning process.

A synthetic gloss enamel showed no increase in permeance during five or six cleaning procedures. With scouring powder and brush, permeance increased about 25%. The flat paint showed an increase in permeance during only one operation—with paint cleaner and bristle brush. It was abraded severely in the test.

The NBS tests indicated that the water-vapor permeance of enamels and flat paints is not affected appreciably by cleaning regardless of the type of detergent employed, if a cloth or a sponge is used, but some increase in water-vapor transmission may occur after repeated cleanings if a harsh implement, like a stiff-bristled brush, is used. The results also showed that some types of interior paints, such as resin emulsion and one-coat flat paint, may not be acceptable under strict requirements.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Conventional Moil Point

Side view of SABUR Point
(Reg. U. S. pat. off.)

Tools begin breaking concrete.

Two inches into concrete. The conventional moil point ends its breaking action. SABUR Point's unique wedge-action continues to shatter concrete.

Six inches in. Conventional moil point is simply cutting a hole. The SABUR Point continues its breaking. Wedge-action permits tool to continue its penetration with point riding free. Stays sharper 3 to 5 times longer than conventional tool. Will shear reinforced mesh, where ordinary moil point hangs up. Call your distributor, or write us for literature.

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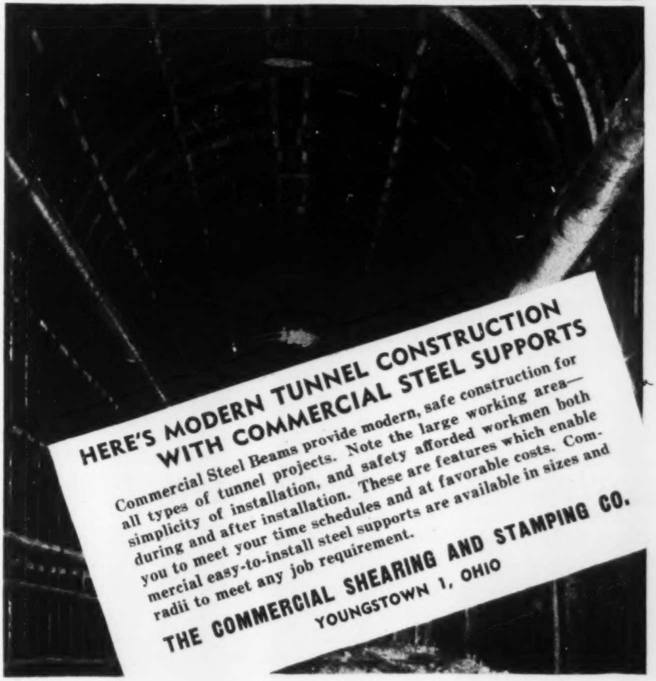
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This NEW VIBRATORY COMPACTOR
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In spite of its small size, the Jackson Vibratory Compactor delivers up to 4500 1¾-ton blows per minute. It propels itself and will firmly compact 900 to 1200 sq. ft. per hour — closely approaching theoretical density of the asphaltic mix being used, or 95% of maximum density in the case of granular soils compaction. It operates on 3-phase, 110V. 60 cycle AC from a *Jackson Power Plant mounted on a trailer which also has means for quickly picking up or lowering the Compactor. The ease and speed with which it may be moved from one location to another, together with the rapid, thorough job it does, makes it far superior to more cumbersome and more costly equipment on many types of operation. It is ideal for highway patching and widening, walks and drives, water-bound macadam bases, railway platforms and crossings; for compaction of sub-bases for concrete floors, in trenches, near abutments and many other places. Let us furnish you with complete details. It's a great time and money saver.

*Power Plant also generates single phase 110 V. 60 Cycle AC and may be used to operate other power tools and lights (Capacity: 2.5 KVA)

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OBITUARIES

William G. Schindlewolf, 60, Akron, Ohio, construction engineer, died April 20.

George Green Dunlap, 64, highway, engineer with the U. S. Bureau of Public Roads in Nashville, Tenn., for 21 years, died April 19. He was a graduate of the University of Kentucky and Purdue. He was on the faculty of the latter institution.

Louis B. Weatherbee, 73, a consultant and representative for Texas Industries, makers of lightweight materials for concrete, died April 11 in Dallas, Tex. He worked with G. S. Hayde in Kansas City, Mo., in 1920 to perfect a light concrete that would be as strong as stone.

Wilbur O. Hogue, 42, formerly on the Idaho state highway engineering staff and more recently the attache to the American ambassador to Beirut, Lebanon, died in Chicago recently after having been flown to Chicago for hospitalization following a shipboard illness while returning to his post after a visit in the United States.

Clinton Kemp Yingling, Jr., 55, structural engineer for Public Buildings Service, who helped make the survey of the structural condition of the White House in 1948, died April 19. Following graduation from George Washington University in Washington, D. C., with a civil engineering degree, he was with Wardman Properties and did the structural design of many office buildings in Washington. He had been in government service for 30 years.

V. M. Dobeus, 50, president and general manager of the Tractomotive Corp., Deerfield, Ill., died in Chicago April 8. His company makes allied equipment for crawler and industrial wheel tractors for road building, materials-handling and general construction.

Charles E. Mac Quigg, 67, dean of the college of engineering, Ohio State University, died April 24 at Columbus. A graduate of Ohio State, he first joined the Santa Fe Railroad and later was with the Anaconda Copper Co., and still later did research and development work for the Union Carbon and Carbide Corp. until he was appointed to head the engineering school of Ohio State. In 1947-48 he was president of the American Society for Engineering Education, and he was also a member of the National Research Council.

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REPORT BMS82
Water Permeability of Walls Built of Masonry Units
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NATIONAL BUREAU OF STANDARDS
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WATERTIGHTNESS AND TRANSVERSE STRENGTH OF MASONRY WALLS
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WHAT CAUSES LEAKY BRICK WALLS?

GET THESE AUTHORITATIVE BOOKLETS—FREE!

For years the National Bureau of Standards has made intensive and constructive studies of the causes and prevention of leakage in masonry walls. The results are contained in the valuable booklets illustrated at the left, one published by the National Bureau of Standards and the other by the Structural Clay Products Institute.

Both these books are "musts" for anyone interested in watertight masonry construction. In a few fact-filled, well-illustrated pages they discuss every important factor in preventing leaky masonry walls. Here are a few of the chapter heads: "Effect of Suction Rate of Brick", "Effect of Kind of Mortar", "Effect of Design of Walls", "Effect of Workmanship", "Effect of Water Retentivity of Mortar".

As manufacturers of Brixment, the world's largest-selling masonry cement, we are just as interested in watertight masonry construction as you are. Hence our offer to send you both books, without cost or obligation. The coupon is for your convenience.

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Gentlemen: Without cost or obligation, please mail me a copy of "Watertightness and Transverse Strength of Masonry Walls" and "Report BMS82 on the Water Permeability of Walls Built of Masonry Units".

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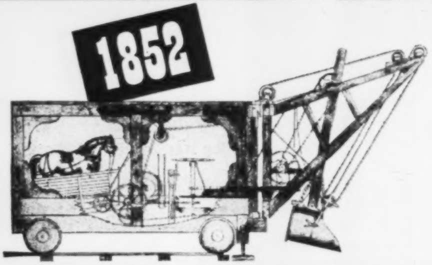

OSGOOD'S 2-horse power excavator

of 100 years ago was powered by a team of horses on a treadmill inside the machine. Although crude by today's standards, this excavator embodied the four principal functions of a modern power shovel; (1) Crowd (2) Hoist (3) Swing (4) Travel. Then, as now, the name OSGOOD stood for sound engineering.

Progress in excavating equipment has been rapid during the past 100 years, but one thing has not changed. Now, as in 1852, the most efficient, most advanced earth-moving equipment is built by OSGOOD — oldest name in the power shovel and crane industry.

Through the years, OSGOOD has been noted for its unparalleled engineering leadership, and today's OSGOOD machines are unequalled in ability to increase your profits.

You owe it to your future to investigate the many modern OSGOOD features designed to increase work capacity, reduce maintenance, and cut down-time. Find out why OSGOOD shovels are setting new production records on jobs from coast to coast. Write today.

EQUIPMENT DESIGNED WITH YOUR PROFIT IN MIND

5814

The OSGOOD COMPANY
MARION, OHIO
AFFILIATED WITH THE GENERAL EXCAVATOR CO.

POWER SHOVELS, CRANES, DRAGLINES, CLAMSHELLS, PILE DRIVERS & HOES. CRAWLER, TRUCK OR WHEEL MOUNTED. DIESEL, GASOLINE OR ELECTRIC POWERED. CAPACITIES $1/2$ TO $2\frac{1}{2}$ CU. YD.

MATERIALS AND LABOR PRICES

Market quotations on construction materials and wage rates reported monthly by ENR correspondents
June Materials, and Labor Prices will appear in June 5, 1952 issue

CEMENT, AGGREGATE, READY-MIXED CONCRETE—F. O. B. CITY

	PORTLAND CEMENT* Per bbl. C/L lots cash. dis. not deducted			SAND AND GRAVEL Per ton. carload lots			CRUSHED STONE Per ton. carload lots		CRUSHED SLAG Per ton. carload lots, f.o.b. plant		CONCRETE BLOCK 8 x 8 x 16-in.; truckload del.; per block		CONCRETE Ready Mixed 1:2:4, over. 50 c.y., del.
	Paper	Bulk	Mortar	Gravel, 1½ in.	Gravel, ¾ in.	Sand	1½ in.	¾ in.	1½ in.	¾ in.	Sand grav.	Lt. wgt. agg.	
Atlanta......	$3.75	$3.45	3.25	$2.00	$2.00	$1.75	$2.10	$2.10	$1.65	$1.85	$0.191	$0.191	$11.50
Baltimore....	3.71	3.40	3.35	2.50‡a	2.50‡a	2.00‡a	2.70‡a	2.80‡a	2.60‡a	2.55‡a	.17	.17a	10.80
Birmingham..	3.11	2.68	2.82c	2.24n	2.24n	1.94n	2.50	2.50	1.10	1.30	.165	.165	7.85
Boston......	4.01	3.69	3.81	2.50a	2.50a	2.50a	1.50a	1.60a	....	....	.206	.22a	11.50h
Chicago.....	3.29	2.99	3.94	3.00‡b	3.00‡b	3.40‡b	3.00‡b	3.00‡b	2.00‡	2.00‡	.22	.22b	11.50
Cincinnati...	3.53	3.23	3.32	2.00‡c	2.00‡c	2.05‡c	2.35‡c	2.35‡c	....	....	.21	.225a	10.95f
Cleveland....	N. A. in C. L.		....	2.05ef	1.85f	1.70	3.81a	3.81a	2.85‡	2.85‡	....	.23	13.00g
Dallas.......	2.95	2.65	2.70	2.18	2.28	1.84	2.22	2.38	....	....	.125e	.215	9.30
Denver......	3.89	3.64	3.89	1.85	2.00	1.20	....	....	....	....	.22	.255a	10.50
Detroit......	3.27f	3.00	3.05	4.25‡b	4.25‡b	3.75‡b	4.25‡	4.25‡	4.25‡	4.25‡	.19	.20a	10.30f
Kansas City..	3.30	3.03	3.15	1.85‡	1.85‡	1.50a	2.00‡a	2.00‡a	....	....	.23ag	.23e	10.95b
Los Angeles..	4.00a	3.60a	4.72	1.95a	2.20a	1.95a	2.08a	2.08a	....	....	.11fm	.235m	10.43lhm
Minneapolis..	3.80d	3.49d	3.36	2.30‡ag	2.30‡ag	1.35‡ag	2.50‡ag	2.50‡ag	....	....	.21ik	....	11.25fi
Montreal....	3.01ac	2.86ac	....	2.50	2.50	2.25	1.05ij	1.30ij	....	....	.20	.20e	9.65ek
New Orleans.	3.20e	2.90e	3.18	2.32	2.32	1.82	....	....	1.05	1.25	.25	....	12.90
New York...	3.86	3.55	3.43	2.35bk	2.35bk	1.60bk	2.50bl	2.50bl	....	....	....	....	11.30an
Philadelphia..	3.38/3.77‡	3.07/3.44‡	3.38/3.43‡	2.65‡	2.75‡	2.15‡	2.10‡	2.15‡	1.75	1.65	.22/.25	....	11.50
Pittsburgh...	3.32	3.04	3.32	2.15‡	2.15‡	2.10‡	2.60‡	2.60‡	2.15	2.15	.23d	.23d	11.00
St. Louis....	3.27/3.48b	2.84/3.10b	3.05/3.22	2.90am	2.70am	2.30/2.70am	1.70j	1.70j	1.25	1.25	.215	.27ei	10.40
San Francisco	3.36	2.96	....	1.92	1.92	2.02	2.02	2.02	....	....	....	.22cl	10.30c
Seattle......	3.75a	3.25a	4.50h	3.00‡bm	3.00‡bm	3.00‡bm	3.50‡bm	3.50‡bm	....	....	.24j	.3325j	10.95j

‡ Delivered. * Prices incl. dealers comm. except as noted.
CEMENT: *a* Subj. to 10¢ dis. *b* Less 2% for cash. *c* CL price dealers' comm. not incl. *d* Dealers sell only LCL. *e* Plus switching charges. *f* Paying up to $3.80 for cement brought in from outside sources. *g* Warehouse pickup. *h* LCL.
SAND, GRAVEL, STONE & SLAG: *a* Truck lots. *b* Per cu. yd. *c* 5 tons or more. *e* ½". *f* Pea gravel. *g* Less 5% for cash. *h* Less than 5 tons. *i* Sales tax incl. *j* F.o.b. quarry. *k* Barge lots asd. *l* F.o.b. scow Hudson river. *m* Less 2% for cash. *n* F.o.b. cars.

CONCRETE BLOCK: *a* Cinder. *b* Waylite. *c* Haydite. *d* Celocrete. *e* 5½ x 8 x 12 in. *f* 8 x 4 x 16. *g* F.o.b. truck at job. *i* Less 2% for cash. *j* Less 1% for cash. *k* 8x8x18. *l* F.o.b. plant San Rafael. *m* F.o.b. yard.
READY MIXED CONCRETE: *a* 5 cu. yds. or over del. Man. *b* 25 cu. yds. or more. *c* 10–100 cu. brackets. *e* 2,000 lb. concr. *f* 2500 lb. comp. *g* Aver. haul 7–9 mi zone. *h* Less 50¢ for cash. *i* 5% off for cash. *j* 2% off for cash *k* Sales tax included. *l* 1:2½:4. *m* F.o.b. yard. *n* Plus escalator clause.

CASH DISCOUNTS CEMENT to Contractors: Truck delivery, 2% for cash on 10th of month; on carload deliveries, no trucking, same as dealer cash discount 10c. per bbl. for payment within 15 days of date of invoice. Subject discount 10c. per bbl. 20 days in Montreal.

CURRENT MAXIMUM PRICES AT CEMENT MILLS

Charge for bags not included. For paper bags add 30¢ per bbl., not refundable

	Bulk		Bulk		Bulk		Bulk		Bulk
Richard City, Tenn....	$2.60†	Buffington, Ind........	$2.55†	Steelton, Minn........	$2.65†	Muskegon, Mich.......	$2.70†	Toledo, O.............	$2.60†
Clinchfield, Ga........	2.60†	Independence, Kan....	2.50†	Leeds, Ala............	2.45†	Saginaw, Mich........	2.60†	Milwaukee, Wis.......	2.75†
Kingsport, Tenn.......	2.60†	Hannibal, Mo.........	2.55†	Duluth Minn..........	2.65†	Wyandotte, Mich......	2.60†	Green Bay, Wis.......	2.75†
West Des Moines, Iowa.	2.65†	Northampton, Pa......	2.60†	Hudson N. Y..........	2.60†	Buffalo, N. Y.........	2.60†	Ironton, O............	2.60†
Nazareth Pa..........	2.60†	Universal, Pa.........	2.65†	Alpena, Mich.........	2.50†	Oswego, N. Y.........	2.75†	Montreal City.........	2.61
Bath, Pa..............	2.60†	Waco, Tex. (+ 10¢ tax)	2.50†	Detroit, Mich........	2.60†	Cleveland, O..........	2.60†	W. Winfield, Pa.......	2.65†

† *Prices to hold for second quarter of* 1952.

PAVING BRICK, BLOCK, ASPHALT, ROAD OILS—F. O. B. CITY

	PAVING BRICK AND BLOCK			PAVING ASPHALT Per ton, less than 80 penetration		ASPHALT BINDERS—FLUXES Per gal., 80–300 penetration		CUTBACK ASPHALT Per ton		ROAD OIL Per gal.	ASPHALT EMULSION (Quick-breaking) Per gal.	
	Granite Per M lots of 50,000 4x4x8 in.	Brick per M 3x4x8½ in. carload lots	Wood per sq. yd. 3½ in. 16-lb. treat	Tank car	Drums	Tank car	Drums	Tank car	Drums	Tank car	Tank car	Drums
Atlanta.........	$73.00	$35.00	$2.25	$26.00	$32.25	$0.1975	$0.339	$0.095w	$0.185w	$0.105	$0.115	$0.225
Baltimore......	150.00‡	57.70‡	.....	22.00	.....	.0809	0.15	.09w	.17w	.09i	.09	0.12
Birmingham...	......	45.50i	.....	......	.....	.....	.....	......	......	......	......	......
Boston.........	......	......	.....	24.50a	35.50a	22.00av	35.50av	......	......	.09a	.105a	.22a
Chicago.......	155.00‡	90.00‡b	4.40/4.60‡f	20.25b	30.25b	19.25bv	29.25bv	.0875bw	.16^{b}w	.075b	.....	.....
Cincinnati.....	.....	.....	.....	22.50^B	.....	.....	.....	.10w	.....	.....	.....	.....
Cleveland......	200.00	55.00d	4.12g	23.00^A	.....	23.00^A	....	.1025^{A}w	.19^{A}w	.....	.11^A	.19^A
Dallas.........	e	40.00	e	24.05	43.09	.1016	.2103	27.09	47.87	.0980	.1041	.2128
Denver........	.....	48.00	.....	.....	....	.....	.....	.....	.....	.....	.....	.....
Detroit........	.....	92.00	.. ..	26.82	....	26.82v	.....	.117w	.....	.0925	.....	.279r
Kansas City...	e	e	e	18.55cl	...	.....	.....	.0725w	.....	.0635c	.....	.....
Los Angeles....	e	......	e	15.50dmx	....	15.50dvx	....	17.00dx	.....	16.00dv	.0825j	.1525j
Minneapolis....	......	......	2.83h	23.90	....	22.90	.....	.0994w	.....	.0894	.1035	.....
Montreal......	.....	e	e	27.10n	36.65n	.135n	.183n	16.30nu	18.80nu	.132n	.184ns	.225ns
New Orleans...	......	......	.....	17.50e	....o	17.50ev	.....o	.085ew	.....o	.0882	.085	.....
New York.....	.....	.....	3.12f	26.26q	47.59q	25.26st	46.58st	.1071w	.2021w	.1071	.1072	.1993
Philadelphia...	175.00	110.00	4.06	22.00	....	.....	.....	.095w	.....	.....	.....	.....
Pittsburgh.....	165.00	48.00	4.60	23.00	37.00	.10	.20	27.00	39.00	.095	.09	.205
St. Louis......	.....	.....	.....	18.68f	....	.1698	.....	.0865/.089w	.....	.15	.....	.....
San Francisco..	.....	55.00e	.....	17.00g	32.50gp	17.00gkv	22.50gkv	19.00g	36.50g	17.50v	.085y	.....
Seattle........	.....	.....	.....	17.00h	37.50h	16.25hv	.....	19.50h	.....	18.50hv	.095h	.105hr

‡ Delivered.
PAVING BRICK & BLOCK: *a* CL. *b* 3½ x 4 x 8½. *c* 2½ x 8½ x 4. *d* LCL, truck deliveries. *e* Not used. *f* 2" interior 6# treat. *g* 3". *h* 8# treat. *i* 3 x 3⅝ x 8½.
ASPHALTS: *a* Price at plant, Everett, Mass. *b* F.o.b. refinery, Lockport, Ill. *c* F.o.b. Sugar Creek, Mo. *d* F.o.b. refinery, El Segunda. *e* F.o.b. Baton Rouge. *f* F.o.b. Wood River or Roxana, Ill. *g* F.o.b. Richmond, Calif. *h* F.o.b. Martinez, Calif. *i* Bulk refinery. *j* F.o.b. refinery, Inglewood, Calif. *k* 50–110 penetr. *l* Less than 100 penetr. *m* 40–80 penetr. *n* Tax incl. *o* Drums not avail. *p* Shipped in steel bbl. *q* 40–85 penetr. *r* In customer's drums. *s* Shipped in drums, per drum. *t* 85–300 penetr. *u* Per 100 gal. *v* Per ton. *w* Per gal. *x* Also tank trucks. *y* F.o.b. Oakland. ^{A} F.o.b. refinery Cleveland. ^{B} F.o.b. Latonia, Ky., 50–300 penetr.

IRON AND STEEL PRODUCTS—PER 100 LBS. BASE MILL PRICES

	STRUCT SHAPES—	PLATE CARBON STEEL	REINF BARS billet	RIVETS ¾-in. structural	SHEET PILING Base	STEEL RAILS Per Net Ton Standard	Light	Re-rolled	TRACK SUPPLIES Angle Bars	Std Spikes	Tie Plates	Track Bolts
Birmingham Area	$3.65	$3.70	$3.70	$7.85	....	$72.00	$80.00	Not available	$4.70	$6.15	$4.50	....
Chicago Area	3.65	3.70	3.70	7.85	$4.45	72.00	80.00		4.70	6.15	4.50	....
Pittsburgh Area	3.65	3.70	3.70	7.85	4.45	72.00	80.00		4.70	6.15	4.50	$9.85
Buffalo Area	3.70	3.70	3.70	7.75	4.45	72.00	80.00	....	4.70	6.15	4.50	9.85
Cleveland	....	....	3.70	7.85	....	......	......	....	....	....	....	9.85
Youngstown Area	....	....	3.70	....	....	......	......	....	....	6.15	....	....
Geneva	3.65	3.70	....	....	....	......	......	....	....	....	....	....
Los Angeles	....	....	4.40	....	....	......	......	....	....	6.15	....	....
Pueblo	3.65	3.70	3.70	....	....	72.00	80.00	....	4.70	6.15	4.50	9.85

IRON AND STEEL PRODUCTS—F. O. B. WAREHOUSE, PER 100 LBS., BASE PRICE

	STRUCTURAL SHAPES Per 100 lb. base price	REINFORCING BARS Per 100 lb., base price u 5 tons to carload lot b New billet	Rail steel	Add switch	$/cwt for Del.	EXPANDED METAL LATHk Per 100 sq. yd., carload lots Std. diamond mesh. 3.4 lb.	Std. ribbed 3.4 lb.	WELDED FABRIC REINFORCINGd Per 100 sq. ft., carload lots 4x16 in., No. 5 & 10 wires	4x12 in., No. 8 & 12 wires	6x6 in., No. 6 & 6 wires
Atlanta	$6.80	$6.65	$6.65	$.025	$.10	$31.50	$31.50	A.P.M.* Joliet, Illinois, Donora, Penn., $2.66 F.o.b. Mill: Monessen, Penn., $2.76	A.P.M.* Joliet, Illinois, Donora, Penn. $1.87 F.o.b. Mill: Monessen, Penn., $1.93	A.P.M.* Joliet, Illinois, Donora, Penn., $2.79 F.o.b. Mill: Monessen, Penn., $2.89
Baltimore	6.15	5.49l	....	....	.10	42.00	45.00			
Birmingham	5.70	5.75	5.75	.05	.15	47.00p	52.00p			
Boston	6.20a	6.19	6.19	....	.15	40.50	44.50			
Chicago	5.70	4.95ff	4.95ff	.0625	....	33.50C	37.50C			
Cincinnati	6.24ak	5.88r	....	....	.15	38.50szee	41.00szee			
Cleveland	5.95	4.81v	....	....	.10	37.00‡	40.00‡			
Dallas	8.85	7.00	7.00	....	....	49.00	52.00			
Denver	7.20	7.10c	....	....	....	54.50s	65.00qs			
Detroit	6.09	5.74n	....	....	.20	53.00	58.00			
Kansas City	6.30nn	5.90#	....	....	....	39.50	41.50			
Los Angeles	6.41fhh	6.21g	....	...	.15	48.00	54.00kk			
Minneapolis	6.15hh	7.12ll	7.12ll	....	.30	37.00	39.50			
Montreal	6.55iB/6.75A	4.75i	4.75g	....	....	44.10h	46.80h			
New Orleans	....	5.55ok	....	.05	.10	40.00	40.00			
New York	6.50r	6.25	6.25	....	.30	38.50st	45.00st			
Philadelphia	5.90	5.95	....	....	....	38.00‡	42.00‡			
Pittsburgh	5.40/5.60	5.40/5.60	....	....	.10	34.00	36.00			
St. Louis	6.02a	5.34c	5.34c	....	....	47.00aa	53.00aa			
San Francisco	7.15ii	6.50l	....	....	.15	40.50	43.50			
Seattle	4.30e	5.55d	....	....	....	57.00smm	47.00smmx			

* At Producing Mill.

‡ Delivered. b 1–5 tons, add 35¢. Less than 1 ton, add 50¢. c 20 tons or over base. d Mill price plus freight. e F.o.b. plant. f Includes delivery in free delivery zone. g 10,000 to 39,999 lbs. h List price. Dominion tax exempt. Provincial and Municipal tax extra. i Plus Dominion, Provincial and Municipal sales tax. j Price per ton. k F.o.b. city. l Intermediate and hard grade, new billet. m Per sq.yd. n 5–10 tons. o 5 to 20 tons base. p Del. of 500 sq. yd. or more. q Std. ribbed. 4 lb. per sq. yd. r 5 tons or over. s LCL. t Asphalt coated. u Note: Revised size extra — 1 in., 1¼ in., 1½ in., 10¢. ⅞ in., ¾ in., 15¢. ⅝ in., 25¢. ½ in., 50¢. ⅜ in. 80¢. ¼ in. $1.90. v 20 tons. Straight. w Copper bearing. x 2.5 lb. per sq. yd. y $0.0093 transportation tax included. z Copper alloy. aa Delivered truck to job. Contractor to do unloading. dd F.o.b. dock. ee F.o.b. cars. ff Carload lots. gg Including sales. hh 10,000–19,999 lbs. ii 400–999 lbs. kk ⅜" ribbed. ll 5 to 8 tons, f.o.b. city. mm 2% off for cash. nn 1–5 tons. # 10 tons to CL. a 2000–9999 lbs A. Amer. struct'l shapes. B. Canadian shapes. C. Price to dealers, Price to contractors, CL deliv., Sta. dia. $50.00, ribbed $45.00 per 100 s. y.

PLUMBING, HEATING, WATER, SEWER AND DRAIN PIPE

	C. I. PIPE Per net ton f.o.b. 6 in. to 24 in.a	ASBESTOS CEMENT PIPE per lin. ft., f.ob. city 6" Pr Cl. 150	12" Sew Cl. I	VITRIFIED SEWER PIPE Per foot, Delivered ASTM C13-44T std. 8 in. s.s.	std. 12 in. s.s.	24 in. ds.	36 in. ds.	CLAY DRAIN TILE ASTM C4-24 Per 1,000 ft., carload lots, f.o.b. 6 in.	8 in.	CONCRETE SEWER PIPE Per ft., delivered: ASTMC 14-41 12" in.	24 in.
Atlanta	$99.00	$1.44	$2.42	$0.43	$0.67	$3.39aa	$7.00aa	$114.00	$140.00	$0.45	$2.00
Baltimore	109.00	1.46	2.42	.539	1.0395	4.23A	11.275A	178.20	274.80	.90	2.45
Birmingham	93.00	1.44	2.42	.42	.75	2.99	....	210.00‡	375.00‡	1.25m	2.75m
Boston	113.00	1.46	2.20	.532uvx	1.08uvy	4.41uvy	11.685uvy	187.80v	289.20v	1.55mg	3.80mg
Chicago	107.00	1.44	2.20	.65	1.25	5.10	13.50	150.00‡	270.00‡	.80	2.80
Cincinnati	106.00	1.46	2.29	.567y	1.093y	4.32y	11.175y	164.40	254.10	.75m	2.80m
Cleveland	108.00	1.46	2.29	.462x	.89x	3.69x	10.045x	158.00m	245.65m	.75m	2.95m
Dallas	107.00	1.46	2.54	.436	.822	3.234b	9.17b	......	......	.49	1.60
Denver	115.00	1.55	2.54	.43dd	.74dd	3.18dd	....	......	......	.74m	2.50m
Detroit	108.00	1.46	2.29	.70	1.35	5.35	14.40	240.00m	360.00m	.80	3.20
Kansas City	106.00	1.46	2.29	.515	.92	3.64	....	216.70	......	.70g	3.00g
Los Angeles	122.00	1.53	2.29	.54f	1.07f	5.24f	13.06f	228.20f	348.90f	.85	2.40ff
Minneapolis*	112.00	1.50	2.42	.66mo	1.20mo	4.85mo	....	......	......	1.36h	3.87h
Montreal	100.00	....	....	.85z	1.50z	5.25z	....	......	......	1.17j	3.11j
New Orleans	101.50	1.44	2.42	.498	.905	5.03	....	229.70bb	402.00bb	.65	2.29
New York	111.35	1.46	2.20	.62	1.19	4.73	12.40	......	......	1.15	2.50
Philadelphia	110.00	1.44	2.20	.65	1.25	4.95A	12.65A	300.00‡	350.00‡	1.55h	3.75h
Pittsburgh	109.00	1.46	2.20	.406m	.772m	2.85m	7.652m	147.00	230.00	1.05h	2.50h
St. Louis	103.00	1.46	2.29	.51	.93	3.65	8.58	160.00l	300.00l	1.20il	2.70hl
San Francisco	122.00	1.55	2.29	.61d	1.20d	5.03d	12.57d	240.00l	400.00l	.95	3.20
Seattle	124.00	1.55	2.42	.51b	.91b	....	....	150.00c	......	.86ee	2.56ee

‡ Delivered. a Class B & heavier. Based on existing freight rates; subject to rate change. Gas pipe and class A, $5 per ton additional. 4 in., $7 per ton additional, 30 in. and larger, usually, $1 per ton less. b Extra strength ASTM C 200–44T. c 4-in., $90. d SS361-A. e 30-in. f F.o.b. factory. g Culvert pipe. Reinforced, ASTM C76–41. h Reinforced, ASTM C75–41. i Reinforced, ASTM C76–37. j Centrispun. No. standard specifications in Can. l F.o.b. plant. m Truck delivery. o Listed price is based on LCL (no minimum). p Less than 5 tons, per price per ft. t Within switching limits. u ASTM C13–40. v C.L.f.o.b. origin, freight allowed. x 2 ft. lengths. y 3 ft. lengths. z CESA A 60–1941 specifications used. aa *Extra strength ASTM C-200-50.* A standard strength. * 6" to 8", $1.65 per ft.; carlots, F.o.b. track Class 150. bb Freight allowed to destination in city. cc Truck loads; f.o.b. plant, Newton. dd LCL delivered, f.o.b. truck. ee 1% off for cash. ff 21.

*WROUGHT STEEL PIPE

(Full standard weight)

Mill	2½ & 3 in., Butt Weld† Black %	Galv. %	3½ to 6 in., Lap Weld† Black %	Galv. %
Lorain, Ohio	43.5	23.0	....	....
Aliquippa, Pa.	43.5	21.5	36.5a	14.5a
Sparrows Pt., Md.	41.5	21.0	33.5a	12.5a
Benwood, W. Va.	43.5	23.0	38.0c	17.0c
Youngstown, O.	43.5	23.0	....	....
Indiana Harbor, Ind.	42.5	22.0	35.5a	14.5a
Sharon, Pa.	43.5	21.0	....	....
Wheatland, Pa.	43.5	21.5	38.5a	16.5a
Etna, Pa.	43.5b	23.0b	38.0cb	17.0cb
Fontana, Calif.	32.0b	18.5b	24.0ab	10.0ab

† Threaded and coupled. a 3½ to 4 in. b Continuous weld. c 5 and 6 in.

* WROUGHT STEEL PIPE: Discounts from standard list consumers carload prices. Base price approx. $200 per net ton. List prices per ft.: *Butt Weld:* ⅛ in., 5½¢; ¼ in., 6¢; ⅜ in., 6¢; ½ in., 8½¢; ¾ in., 11½¢; 1 in., 17¢; 1¼ in., 23¢; 1½ in., 27½¢; 2 in., 37¢; 2½ in., 58½¢; 3 in., 76½¢. *Lap Weld:* 3½ in., 92¢; 4 in., $1.09; 5 in., $1.48; 6 in., $1.92. Freight rates to destination to be added to price plus 3 percent tax on transportation.

WROUGHT IRON PIPE: List prices per ft. same as wrought steelpipe. Discount for Pittsburgh base. *Butt Weld* — 1 in. black, + 20.0, galv. + 50.0; 1¼ in. black, + 20.0, galv. + 49.5, 1½ in. black, + 14.0 galv. + 46.0; *Lap Weld* — 2½ in. to 3½ in. black + 20.5, galv. + 48.5; 4½ in. to 8 in. black + 17.5, galv. + 44.0. Freight rates to destination to be added to name delivered price.

LUMBER, TIMBER, PLYWOOD—PER M FT., B.M., CARLOAD LOTS F.O.B.

SHORT LEAF YELLOW PINE AND DOUGLAS FIR

All S. L. Y. P. is No. 2 common or better and for No. 1 N. C. Box. (Prices in Bold Face)
All Fir boards, dimensions, planks No. 2. Fir small timbers and timbers are No. 1 Lengths up to 20 ft.
(*Prices in italics*)

LONG LEAF Y. P. Merchantable grade up to 20 ft.

PLYWOOD Rail freight increment (See note for base price)

	1x6 s4s	1x8 s4s	2x4 s4s	2x6 s4s	2x8 s4s	2x10 s4s	3x12 Rgh	6x12 Rgh	12x12 Rgh	Long Leaf 2x12 Rgh	Long Leaf 12x12 Rgh	Plywood ⅝"	Plywood ¾"
Atlanta †	**$73.00**	**$76.00**	**$67.00**	**$69.00**	**$73.00**	**$76.00**	**$75.00**	......	......	......	......	$22.32	$27.24
Baltimore *	**90.00**	**94.00**	**75.00**	**75.00**	**80.00**	**85.00**	**110.00**	......	......	**$148.00**	**$148.00**	25.92*	31.60*
	108.00g	*108.00g*	*108.00g*	*108.00g*	*108.00g*	*108.00g*	*114.25*	*$124.75*	*$124.75*	......	......	.....	.....
Birmingham †	**83.00**	**83.00**	**70.00**	**80.00**	**83.00**	**85.00**	**95.00**	......	......	**115.00**	**150.00**	21.78	26.58
	85.00	*85.00*	*77.00*	*80.00*	*80.00*	*79.00*	*85.00*	*85.00*	*85.00*	......	......	.....	.....
Boston	**104.00a**	**108.00a**	**98.00a**	**102.00a**	**108.00a**	**113.00a**	......	......	......	......	......	25.92*	31.60*
3	*100.00*	*100.00*	*108.00*	*108.00*	*108.00*	*108.00*	*127.00*	*127.00*	*127.00*	......	......	.....	.....
Chicago **	**100.00**	**105.00**	**92.00**	**100.00**	**101/102**	**105/106**	**105.00**	......	......	**134.00**	**134.00**	18.72	22.80
	103.00	*104/105*	*104/105*	*108.00*	*108/110*	*108/110*	*110.00*	*110.00*	*110.00*	......	......	.....	.....
Cincinnati *	**99.00**	**102.00**	**84.00**	**92.00**	**96.00**	**98.00**	**118.00**	......	......	**135.00**	**135.00**	21.78	26.58
	109.00	*109.00*	*115.00*	*115.00*	*115.00*	*115.00*	*135.00*	*135.00*	*135.00*	......	......	.....	.....
Cleveland **	**95.00**	**99.00**	**90.00**	**90.00**	**96.00**	**98.00**	......	......	......	......	......	22.20	27.12
	......	......	*106.00*	*108.00*	*112.00*	*112.00*	*126.00*	*126.00*	*126.00*	......	......	.....	.....
Dallas k†	**78.00**	**80.00**	**69.00**	**58.00**	**59.00**	**59.00**	**98.00**	......	......	**108.00**	**98.00**	18.72	22.80
Denver *	*Not in stock*		*131.00*	*130.00*	*128.00*	*127.00*	*136.00*	*152.00*	*152.00*	......	......	13.92	16.98
Detroit ‡	**106.00**	**110.00**	**100.00**	**108.00**	**112.00**	**113.00**	......	......	......	......	......	21.78	26.58
	102.75	*102.75*	*107.75*	*108.50*	*107.50*	*106.00*	*116.25*	*120.00*	*120.00*	......	......	.....	.....
Kansas City *	**122.00**	**122.00**	**122.00**	**122.00**	**122.00**	**122.00**	......	......	......	......	......	16.56	20.16
	122.00	*122.00*	*122.00*	*122.00*	*122.00*	*122.00*	*147.00*	*157.00*	*157.00*	......	......	.....	.....
Los Angeles 1	*96.00*	*96.00*	*96.00*	*96.00*	*96.00*	*96.00*	*114.00*	*124.00*	*114.00*	......	......	16.61*ab	20.25*ab
Minneapolis ♯	*130.00*	*130.00*	*135.00*	*135.00*	*135.00*	*135.00*	*150.00*	*150.00*	*150.00*	......	......	16.56	20.16
Montreal	ab85.00	90.00	85.00	85.00	90.00	100.00	......	......	......	......	......	.....	.....
	175.00	*175.00*	*175.00*	*175.00*	*175.00*	*175.00*	*175.00*	*175.00*	*170.00*	......	......	.....	.....
New Orleans †	**100.00**	**100.00**	**92.00**	**85.00**	**90.00**	**94.00**	**118.00**	......	......	**148.00**	**140.00**	18.72	22.80
†	*100.00*	*102.00*	*103.25*	*101.25*	*101.25*	*99.50*	*122.00*	*122.50*	*117.00*	......	......	.....	.....
New York 2	**108/112**	**112/116**	**105/110**	**$112^{50}/117^{50}$**	**$115^{50}/120^{50}$**	**120/125**	**150/160**	......	......	**210/240**	**210/240**	25.92*	31.60*
	......	......	*Range from $120.00 to $125.00*				*135/150*	*149/155*	*149/155*	......	......	.....	.....
New York **	**95.00**	**97.00**	**81.00**	**94.00**	**97.00**	**99.00**	**130.00**	......	......	......	......	...	...
	97.00	*97.00*	*108.00*	*106.00*	*106.00*	*106.00*	*116.00*	*128.00*	*128.00*	......	......	.....	.....
Philadelphia			**Range from $114.00 to $127.00**				**114/127**	......	......	**200/210**	**200/210**	25.92*	31.60*
			Range from $125.00 to $150.00				*130/140*	*150.00*	*150.00*	......	......	.....	.....
Pittsburgh †			**Range from $90.00 to $95.00**			**100/110**	**100/110**	......	......	**100/110**	**115/125**	22.56	27.48
			Range from $100.00 to $110.00			*110/120*	*110/120*	*140/155*	*145/155*	......	......	.....	.....
St. Louis ♯c	**113.00e**	**117.00e**	**104.00^{m}**	**127.00^{d}**	**110.00^{i}**	**121.00^{d}**	......	......	......	......	......	18.72	22.80
	......	......	*124.00^{i}*	*129.00e*	*129.00e*	*127.00e*	*190.00e*	*190.00*	*180.00*	......	......	.....	.....
San Francisco A†	*68.00*	*68.00*	*79.00*	*78.00*	*78.00*	*74.00*	*81.00*	*86.00*	*83.00*	......	......	12.28*a	14.91*a
Seattle †	*77.50g*	*77.50g*	*77.50g*	*77.50g*	*77.50g*	*77.50g*	*77.50g*	*77.50g*	*77.50g*	......	......	.....	.....

† F.o.b. mill. * F.o.b. city, CL, out of yard. ** F.o.b. city, CL, direct mill shipment. ‡ Deliv. to contr. CL. 1. Retail, LCL, at yard. ♯ Retail, LCL, deliv. 2. Deliv. truck lots. 3. sad.

LUMBER: **Bold Face type, Southern Pine.** *Italics, Douglas Fir.* *a* Spruce *b* Tax exempt. *c* 5M lots. *d* 8–12 ft. lengths. *e* 8–16 ft. lengths. *f* 18 ft. or under. *g* No. 1 common. *i* 8 ft. lengths. *k* No. 3 common *l* 8–10 ft. lengths. *m* 12 ft. lengths.

A Rail freight rate from Northwest mills to San Francisco are $11.50 to $15.00 per M ft bm. From Northern Calif. mills $9.00 by rail $12.00 by truck to yard with surfaced stock $2.00 to $3.00 less.

PLYWOOD: Plyform grade Fir Plywood, 4′ by 8′ panels, 5-ply, sanded 2 sides, water resistant glue, carload lots, delivered per 1,000 sq. ft. surface. Seattle base price on ⅝", $176.00; on ¾", $201.00. Exterior concrete form ⅝" $196.00, ¾" $223.00. For other centers add rail freight increment from table on proper size. Oiling and edge sealing charges included. *a* Lower rate by water shipment. *b* 50,000 lb. minimum.

* Incl. new freight rates. Rates for other cities not avail. as we go to press.

GLASS, EXPLOSIVES, CHEMICALS

	WINDOW GLASS Discounts from jobbers list, Feb. 1, 1950a Single or Double Thickness A quality	B quality	EXPLOSIVES Per lb. 40% Ammonia Gelatin in 50 lb. cases delivered in 200 lb. lots*
Atlanta	79%	80%	$0.2315
Baltimore	70–10%	78–10%	.2315
Birmingham	83%	83%	.1790
Boston	79–10%	79–10%	.2315
Chicago	78%	78%	.2315
Cincinnati	78%	78%	.2315
Cleveland	78–10–10%	78–10–10	.2715
Dallas	75%	75%	.2390
Denver	81–5%	81–5%	.2365
Detroit	78–10–10%	78–10–10%	.2315
Kansas City	80–10%	80–10%	.2365
Los Angeles	75%	80%	.2340
Minneapolis	78–10%	78–10%	.2365
Montreal	40–5%bc	40–10–5%b	21.60hi
New Orleans	78%	77%	.2365
New York	82–10%	82–10%	.3975g
Philadelphia	76%	78%	.2315
Pittsburgh	82%	82%	.2040
St. Louis	80–10%	80–10%	.2365
San Francisco	70%	70%	.2315
Seattle	75%	78%	.2340

Price of 60% Ammonia Gelatin is $0.0125 per lb. higher than 40%

Glass; a Jobbers' list price per box, 14 x 20, ss, $42.75 for A quality, $37.50 for B quality; 14 x 20, ds, $60.00 for A quality, $52.75 for B quality. *b* Discount from list, Apr. 1951; sales tax included, but 6% tax exemption not allowable for. *c* Single thickness.

Explosives; * Urban prices influenced by service charges or local storage and delivery regulations do not consistently reflect quantity prices in less congested areas. *g* In borough of Kings, Queens, and Richmond and in Manhattan south of Canal St., add delivery charge of $20.00 per trip. *h* F.o.b. city per 100 lb. forcite, 40%. Forcite 60%, $23.35. *i* F.o.b. Beloeil (near Montreal).

40% Ammonia Gelatin price ranges in other than urban areas, per lb.
(except Seismograph Grades)

	C/L 20,000 lb. net	Tons	200 lb. lots
E. of the Miss., except Fla. and Me.	$0.179	$0.2115	$0.2315
W. of Miss. to Rocky Mtn. States, Fla. and Maine	.184 – .1915	.2165–.224	.2365–.244
Rocky Mtn. States	.184 – .1965	.2165–.224	.2365–.249
Pacific N. W. States	.1815–.194	.214 – .2265	.234 – .2465
Pacific S. W. States	.179 – .1865	.2115–.214	.2315–.2365

PILES, TIES F. O. B.

PILES

Prices per linear foot, fir and pine, bark off, f.o.b. cars, New York. Fir based on Wash. and Ore. points to New York shipping area; pine based on freight from Norfolk.

Dimensions	Points	Length	By Rail Pine*	By Rail Fir
12-in. at butt	6-in.	30 to 50-ft.	$0.51	....
12-in.— 2-ft. from butt	6-in.	50 to 59-ft.	.54	....
12-in.— 2-ft. from butt	6-in.	60 to 69-ft.	.58	....
12-in.— 2-ft. from butt	6-in.	90 to 100-ft.	....	....
13-in.— 3-ft. from butt	5-in.	91 to 100-ft.	....	....
14-in.— 2-ft. from butt	6-in.	50 to 69-ft.	.50/.68	....
14-in.— 2-ft. from butt	6-in.	70 to 79-ft.	.78/.83	.93
14-in.— 2-ft. from butt	5-in.	80 to 85-ft.	.83/.93	.94
14-in.— 2-ft. from butt	5-in.	85 to 89-ft.	....	1.00
14-in.— 2-ft. from butt	5-in.	90 to 100-ft.	....	1.02

* Pine piling over 80-ft. available only in limited quantities.

RAILWAY TIES

Prices f.o.b. per tie for carload lots:		6"x8"x8′ Untr.	6"x8"x8′ Tr.	7"x9"x8′6" Untr.	7"x9"x8′6" Tr.
Boston	Oak i	....	...	....	...
	Pine i	....	....	....	....
New York	S. L. Sap Pine	$2.10	$3.90	$3.00	$5.00
	Mixed Oak	2.65	4.20	3.25	5.50
Birmingham	Hardwood	2.40	3.88a	2.85	4.58a
Chicago	Red Oak	...	4.00a	....	5.00a
Los Angeles	Douglas Fir	....	....	....	....
	Redwood	....	....	....	....
Philadelphia	Red Oak	2.60	3.95	3.45	5.10
St. Louis	White Oak	2.99	...	3.78	....
	Red Oak	2.89	3.55a	3.60	4.61a
	Sap Pine or Cypress	3.37a	....	4.36	....
San Francisco	Douglas Fir	2.20e	3.25af	2.92bf	4.30caf
Montreal	Birch or Maple	....h	... h	....h	....h

Tr.— Treated; Untr.— Untreated. *a* Creosoted. *b* 7" x 9" x 8′. *c* Empty cell. *e* Green. *f* F.o.b. cars. *h* No constant price available. *i* Not available.

CHEMICALS

Water, sewage treatment, road work, f.o.b. carlots, New York

Bleaching powder in drums f.o.b. works, per 100 lb.	$6.00
Chlorine cylinders, liquid, per lb. f.o.b. works	.0875
Calcium chloride, 77–80%, flaked, 100-lb. paper bag, f.o.b. works, ton	25.00
Silicate of soda, 52 deg., in drums, f.o.b. works, per 100 lb.	2.20
Soda ash, 58%, in paper bags, per 100 lb. dense	1.60
Sulphate of aluminum, commercial, in 100-lb. bags f.o.b. works	1.65
Sulphate of copper, in bags, 99% per 100 lb. f.o.b. works	8.95

STRUCTURAL CLAY BUILDING TILE, BRICK AND LIME—DELIVERED

	STRUCTURAL CLAY TILE PARTITION — SCORED Per M. lots of 2,000 pieces or over, 3x12x12 in.	4x12x12 in.	8x12x12 in.	STRUCTURAL CLAY TILE — LOAD BEARING — SCORED Per M. lots of 2,000 pieces or over, 8x12x12 in.	10x12x12 in.	12x12x12 in.	BRICK Per M. in quantity Common backing	Straight hard	LIME Per ton, In paper, Carload lot, Hydrated finishing	Common hydrated	Pulverized, or lump
Atlanta	$195.00	$207.50	$247.50	$327.00	$342.00	$381.50	$27.78	$27.78	$19.00	$17.50	$17.50
Baltimore	183.00	195.00	366.00	415.00	541.00	618.00	36.00k	41.00k	30.00	21.00	....
Birmingham	118.00p	128.00p	236.00p	283.00p	......	......	23.50ff	28.50gg	26.37	17.10	..
Boston	196.00†	209.00†	392.00†	383.25†	......	.....	34.50p	37.50p	30.00†	28.00†	..
Chicago	135.00	145.00	280.00	.....	......	.....	23.00	25.00	30.80	26.00	....
Cincinnati	185.00j	195.00j	340.00jdd	......	......	......	34.50j	46.00j	26.37j	24.62j	.....
Cleveland	172.00**	183.00**	......	.....	......	......	32.00	32.00	25.50	23.50	31.00ee
Dallas	......	118.00	.....	......	...	....	19.75	35.25	32.00	21.80	.....
Denver	......	......	......	......	......	......	34.00	40.00	34.80bb	28.00bb	34.00bb
Detroit	127.75	136.25	255.55	......	317.25	362.60	34.90cc	33.30cc	32.00	30.00	.....
Kansas City	115.50	122.50	245.00	245.00	303.50	367.00	26.00	26.00	30.50	24.50	27.00
Los Angeles	r	r	r	r	r	r	21.00§	.....	34.00	34.00	35.00
Minneapolis	171.50p	192.50p	386.00p	192.50wp	......	......	32.00vp	36.00	37.00bbe	28.00bbe	38.00bbde
Montreal	150.00aq	162.50au	300.00au	......	.....	......	31.00	41.50	34.80	32.50	24.60u
New Orleans	170.00	170.00	310.00	380.00	......	......	31.00	.....	.....	20.00	20.00
New York	138.70h	147.90h	203.40ch	221.90hn	......	......	38.50	.....	38.00	32.00	.....
Philadelphia	126.30	134.80	252.60	302.74	361.35	455.74	29.00	32.00	36.00	21.50	.....
Pittsburgh	112.00	117.00	189.00	216.00	279.00	317.00	32.00	42.00y	25.00	23.00	2.97m
St. Louis	138.00cc	158.50cc	313.00cc	......	351.00cc	......	40.00si	36.25s	.85saa	.65saa	1.10aaspee
San Francisco	156.85a*	177.10a*	235.30dda*	......	......	......	37.00	.....	26.60	26.60	2.65m
Seattle	175.00cc	190.00cc	......	190.00ccw	......	......	39.00s	49.00s	37.50shh	1.45#	3.90mhh

† F.o.b. yard Roxbury. a Smooth. b Per 50 lb. bags. c 6 x 12 x 12 in.-3 cell. d Pulverized hot. e 5%, 10th following month. g 5¼ x 8 x 12. h F.o.b. trucks, job site N.Y.C. j Truck load or over. k $1.00 discount l Red face. m Per bbl., 180 lb. n 7½ x 7½ x 12. Speed title. p Truck lots. q Provincial and Municipal tax extra. r Not used because of earthquake danger. s 2% discount for cash. t 5¼ x 8 x 11½. u Tax exempt. v Sand lime. w 5 x 8 x 12. y Stacked. z Pebble lime price per 80 lb. sack. aa Price per sack. Lime not sold per ton. bb LCL. cc Truck delivery. dd 6 x 12 x 12. ee Pebble lime. 80% common. gg Select. hh LCL. § F.o.b. yard. # Per 60 lb. sack, no incr., ton price no longer quoted. ** Only 1 plant producing quotes on warehouse delivery, previous quotes were truck delivery. * F.o.b. Stockton.

PAINT, ROOFING—F.O.B. CARLOAD LOTS

	RED LEAD Per 100 lb. in 600-lb. (Approx.) bbl. Dry a	WHITE LEAD Per 100 lb. in 100 lb. cases in oil w	READY-MIXED PAINT Per gal., drums Graphite b	Aluminum c	Ferric Oxide d	ROOFING SUPPLIES Carload lots f.o.b. factory Rolls, slate surfaced, 85–90 lb. per sq.	Asphalt felt, per 100 lb.	Tar felt, per 100 lb.	Asphalt coating per gal.	Tar pitch 380 lb. bbl. per ton
Atlanta	$20.90	$32.925	$1.75	$2.70	$1.65	$2.06‡	$2.06‡	$2.06‡	$1.00‡	$36.00‡
Baltimore	20.65	32.55	2.65	4.10	3.22	2.50	4.17	4.17	.42	37.00
Birmingham	20.90	32.925	3.90	3.40	....	2.80	2.75	2.75	....	40.50ee
Boston	20.65	32.55	....	....	....	2.67gg	2.56og	2.56og	.42g	42.00g
Chicago	20.65	32.55	...	....	....	2.73‡u	3.04‡o	3.04‡o	38.00‡bbr	43.00‡
Cincinnati	20.65	32.55	....	....	....	2.30	2.30	2.30	.42y	42.36
Cleveland	20.65	32.55	2.70pggA	3.40ggB	2.80ggC	2.30q	2.30o	2.30o	.36y	40.00hh
Dallas	20.90	33.30	....	4.05	....	3.50q	3.75o	4.35o	.36	46.00
Denver	21.15	33.05	3.07	5.15	2.87	3.25o	2.40o	2.40o	.43ff	42.00
Detroit	20.65	32.55	2.35	3.40	2.50	2.30	2.30f	2.30	.51	40.00
Kansas City	20.65	32.67	....	2.71ys	2.65	2.50	2.50o	2.50o	.313	48.00
Los Angeles	20.65	32.80	3.30	4.50	4.20	2.97	2.01e	l	.44	l
Minneapolis	20.65	28.55/32.67	....	...	....	2.30idd	2.30hidd	2.30hidd	.34idd	37.00r
Montreal	.....	20.70	2.95Dff	4.05Eff	3.35Fff	3.80t	3.85tf	3.85tf	3.00kt	3.15kt
New York	20.65	32.55	3.45y	....	....	2.30	2.30o	2.30o	.36z	37.00
Philadelphia	20.65	32.55	3.25	3.65	3.15	2.54	2.94	2.94	.37	26.00
Pittsburgh	20.65	32.55	2.65	2.65	3.15	2.40	2.81o	2.81o	.39	42.00
St. Louis	20.65	32.55	....	....	....	2.30	2.30h	2.30h	.31y	38.00
San Francisco	20.65	32.80	2.40	....	3.40	2.95	4.00aa	....	.49	.....
Seattle	20.65	33.05	2.96m	2.80m	....	3.58mgcc	3.05hmcc	....	.59mcc	52.00jmcc

‡ Delivered. Note: Red lead in oil 50c higher than white lead in oil. a Red lead prices change frequently due to pig lead price changes. b U. S. War Dept. Spec. 3-49A. c ASTM Spec. D266-31. d 80% minimum ferric oxide. e 15 lb. f Per 432 sq. ft. g F.o.b. yard, Roxbury. h Per roll. 65 lb. i Net carload lot prices; Minneapolis and vicinity. j Asphalt pitch. k Per cwt. l Not used. m 1% discount for cash. o Per 60-lb. p 6-drum. q Per 90-lb. roll. r F.o.b. factory chicago. s 466 Med. t Federal tax included. u Per 90 lb. square. v Per ton. w Price to large paint contractors is $1.25 less. x Mineral surfaced. y 55-gallon container. z Drums. aa Approximate cost per 100 lbs. bb Roofers coating and cement. Price per ton. cc LCL, truck delivery. dd 2% cash discount. ee Asphalt, in 100 lb. package. ff 5-gal drums. gg F.o.b. factory. hh Incl. freight. A. TTP 27. B. TTA 468A. C. TTP 31A. D. Std Black. E. Ready-mixed. F. Over 80% ferric oxide.

SKILLED AND COMMON WAGE RATES—PER HOUR

	Bricklayers	Carpenters	Struct. Iron Workers	Hoisting Engineers	Plasterers	Electrical Workers	Steamfitters	Common Labor Building	Heavy Const.
Atlanta	$2.75	$2.20	$2.335	$2.25	$2.75	$2.60	$2.75	$1.05	$1.05
Baltimore	3.20r	2.58	2.90w	2.85/3.00	2.75	2.75	2.65x	1.49	1.49
Birmingham	2.75	2.125	2.50	2.06	2.42	2.60	2.65	1.10	1.20
Boston	3.06*	2.625	2.82	2.80	2.97	2.80	2.695	1.93	1.93
Chicago	3.25k	2.70	2.80	2.65	3.235n	3.09n	2.75	2.05m	2.05m
Cincinnati	2.90	2.475	2.665	1.825/2.85	2.75	2.70	2.80	1.65	1.65
Cleveland	3.00	2.97x#	2.97x	2.875	2.97	2.825w	2.97	2.35	2.35
Dallas	3.4375†	2.3375	2.50	2.475	3.437†	2.625	2.6125	1.20	1.35
Denver	3.00	2.35	2.35	2.48	3.30	2.75	2.65	1.575	1.575
Detroit	3.00v	2.75	3.05m	2.90	3.005l	3.00	2.75m	2.00	2.00
Kansas City	3.50	2.365w	2.53x	2.365/2.61x	3.025w	2.66	2.75	1.73x	1.73x
Los Angeles	3.00w	2.35w	2.70	2.30w	3.125w	2.75z	2.625w	1.75w	1.75w
Minneapolis	2.90	2.40	2.57	2.35	2.75	2.71n	2.55	1.67	1.67
New Orleans	2.70	2.06	2.45	2.325	2.375	2.50	2.45	1.10	1.10
New York	3.548br	3.09bo	3.348o	3.348o	3.80A	3.597as	3.286bp	1.90	1.90
Philadelphia	3.46i	2.65	3.14j	3.00/3.15v	3.075k	3.28/3.53u	2.85v	1.60	1.90
Pittsburgh	3.25	2.75	2.75	2.825	2.75	2.75	2.80	1.70	1.70
St. Louis	3.55c	2.75h	2.75	2.80	3.00	2.887c	2.75	1.85	1.85
San Francisco	3.25b	2.45	2.70	2.41	3.125	3.00	2.75	1.70	1.70
Seattle	3.30	2.51	2.71	2.64	3.00	2.65	2.75	2.11	2.14
Montreal*	1.75	1.55	1.65	1.45	1.75	1.65	1.70	1.15	1.15

a 6 hr. day. b 7 hr. day. c Incl. 3% vacation stamp fund for bricklayers; 4% for electricans plus 1% N.P. * Cost of living bonus now included in basic wage. # Includes 5¢ per hr. tool replacement. † Plus $5.00 daily bonus. h $2.45 homes and housing + 5¢ vacation fund. i Incl. 3½% welfare. j Incl. 9¢/hr. welfare. k Incl. 7½ ¢/hr. welfare fund. l Incl. 4% vacation fund. m Incl. 5¢/hr. welfare ins. fund. n Incl. 6¢/hr. welfare fund. o Inc.. 3% welfare fund. p Incl. 5% welfare fund and 3% pension fund. r Incl. 3% welfare fund and 20¢ pension fund. s Incl. 5% welfare and pension fund and 4 % vacation fund. u Incl. 1% welfare fund v Incl. 10¢ welfare fund. w Negotiating as we go to press. x Await WSB appr: Balti. & Kans. City 15¢; Cleve. 10½¢. y Eff 11/51. z Eff 6/18/51. A. Incl. 10¢ WF, 10¢ PF & 10¢ Vac. F.

MEXICO CITY PRICES

In Pesos, F.o.b. City		Mar.'52	Apr.'52
Common Wages—Building (8 hr. day)	av. per hr.	.83*	.83*
Common Wages—Heavy Const. (8 hr. day)	av. per hr.	.93*	.93*
Skilled Labor Wages			
Carpenters (8 hr. day)	av. per hr.	2.25*	2.25*
Bricklayers (8 hr. day)	av. per hr.	2.25*	2.25*
Struct. Iron Workers (8 hr. day)	av. per hr.	1.25*	1.50*
Struct. Steel Shapes			
3"-15" x 12 meters	per metric ton	1,111.01	1111.01
Reinf. Steel, Corr. Rods			
⅜" x 11 meters	per ton	1,261.51	1261.51
½" x 11 meters	per ton	1,251.13	1251.13
⅝" x 11 meters	per ton	1,240.75	1240.75
¾" x 11 meters	per ton	1,230.37	1230.37
⅞" x 11 meters	per ton	1,230.37	1230.37
1" x 11 meters	per ton	1,230.37	1230.37
Gravel truck load of 3½ cu. meters			
Blue Gravel	per tr. load	45.00	45.00
Rose Gravel	per tr. load	41.00	43.00
Cement, Std. Port. (Tolteca)	per ton	155.00	160.00
Lumber			
Mex. Sacred Fir (OYAMEL)	per M ft.	800.00	800.00
1st Class Pine	per M ft.	1200.00	1200.00
2nd Class Pine	per M ft.	980.00	980.00

* Increase by 1/6th—work 6 days, paid for 7 days.

ENR Skilled Average: (Bricklayers, Carpenters, Ironworkers): $2.797 **ENR Common Average:** $1.690

PROFESSIONAL SERVICES

Duval Engineering & Contracting Co.

General Contractors

FOUNDATION BORINGS
For Engineers and Architects.
Jacksonville, Florida

Rader Engineering Co.

Water Works, Sewers, Refuse Disposal, Ports, Harbors, Flood Control, Bridges, Tunnels, Highways, Airports, Traffic, Foundations, Buildings, Reports, Investigations, Consultations

1615 duPont Building Miami, Florida

Consoer, Townsend & Associates

Water Supply, Sewerage, Flood Control & Drainage, Bridges, Express Highways, Paving, Power Plants, Appraisals, Reports, Traffic Studies, Airports, Gas & Electric Transmission Lines.
351 East Ohio St., Chicago 11, Illinois

Faulkner & Orpin

Engineering Consultants

Civil, Mechanical and Electrical Market Consultants, Technical Writing and Sewerage and Water

80 K Street Kings Terminal
South Boston 27, Mass. SO. 8-2903

Soil Testing Services, Inc.

Theo. W. Van Zelst Carl A. Metz
John P. Gnaedinger

Soil Borings Rock Coring
Engineering Testing of Soils
Soil & Foundation Reports
4520 W. North Ave. Chicago 39

Metcalf & Eddy

ENGINEERS

Investigations Reports Design
Supervision of Construction and Operation
Management Valuation Laboratory
1300 Statler Building. Boston 16

Ammann & Whitney

Consulting Engineers

Design — Supervision
Bridges, Buildings, Industrial Plants, Special Structures, Foundations, Airport Facilities, Expressways.
76 Ninth Avenue, New York 11, N. Y.
724 E Mason Street, Milwaukee 2, Wis.

Severud-Elstad-Krueger

Consulting Engineers

Structural Design - Supervision
Reports - Buildings - Airports
Special Structures
415 Lexington Avenue
New York 17, N. Y.

Albright & Friel, Inc.

Consulting Engineers

Water, Sewage and Industrial Waste Problems, Airfields, Refuse Incinerators, Power Plants, Industrial Buildings, City Planning, Reports, Valuations, Laboratory.
121 So. Broad St., Philadelphia 7, Pa.

Frederick H. Dechant

Consulting Engineer

Chairman of the Board,
Frederic R. Harris Inc.
Water Works, Industrial Wastes, Sewerage, Recovery Processes, Hydraulic Works, Gas Plants
Phila.: Fidelity Phila. Trust Bldg.
New York: 27 William St.

Inspecting and Testing

Johnson Soils Engineering Laboratory

Engineering design and construction tests run from MOBILE LABORATORY UNITS at construction site. Field load bearing tests.

193 West Shore Ave., Bogota, N. J.
Bogota-Hubbard 7-4408

CLASSIFIED SEARCHLIGHT SECTION ADVERTISING

EMPLOYMENT • BUSINESS • OPPORTUNITIES • EQUIPMENT—USED or RESALE

UNDISPLAYED RATE:

(Not available for equipment advertising)
$1.50 cents a line, minimum 3 lines. To figure advance payment count 5 average words as a line.
POSITION WANTED & INDIVIDUAL SELLING OPPORTUNITY undisplayed advertising rate is one-half of above rate, payable in advance.
PROPOSALS, $1.50 a line an insertion.

INFORMATION.

BOX NUMBERS count as 1 line additional in undisplayed ads.

DISCOUNT OF 10% if full payment is made in advance for four consecutive insertions of undisplayed ads (not including proposals).

EQUIPMENT WANTED or FOR SALE Advertisements acceptable only in Displayed Style.

DISPLAYED—RATE PER INCH:

The advertising rate is $17.10 per inch for all advertising appearing on other than a contract basis. Contract rates quoted on request.

AN ADVERTISING INCH is measured ⅞ inch vertically on one column, 3 columns—30 inches—to a page. E.N.R.

NEW ADVERTISEMENTS Address New York Office, 330 W. 42nd St., N. Y. 36, for May 29th issue closing May 19th.

Position available: Public Works Director.
Salary range: $6000 to $7200.
Qualification: Applicant should have previous public works experience and be a graduate Civil Engineer or the equivalent.
Location & size: Located in a Southeastern state. City of 40,000 population.

P-4163, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

REPLIES (Box No.): Address to office nearest you
NEW YORK: 330 W. 42nd St. (36)
CHICAGO: 520 N. Michigan Ave. (11)
SAN FRANCISCO: 68 Post St. (4)

POSITIONS VACANT

ASSISTANT MILL Metallurgist for large Copper Company, Chile, South America. College graduate with some experience, to work in Mill Metallurgical Laboratory. 3-year contract. Transportation both ways and salary while traveling paid by Company. In reply give complete details. P-3932, Engineering News-Record.

EARTHWORK SUPERINTENDENT Wanted—to handle 2,000,000 yard contract in New York State this Season. Permanent position. A record of previous successful performance in this type of work required. Complete summary of work performed and capacity employed requested. Salary $10,000 a year. P-4068, Engineering News-Record.

ENGINEER, EXPERIENCED in design and-or construction of Water Works, Sewerage Systems, Water Treatment, Sewage Treatment Plants, Surveying. State age, experience, salary requirements, references and when can report. P-4141, Engineering News-Record.

EXPERIENCED ENGINEER thoroughly familiar with all phases of Road, Bridge, Airports and Water Mains & Drainage contracting work. Must be able to take complete charge of all work in progress, supervise men, allocate and have equipment in top working order. If you can lay-out work and are willing to take the responsibilities of the above requirements the salary is open to you. Only those that meet these requirements need apply. All replies in strictest confidence. Permanent work. Phone, between 7 & 8 PM, or write Joseph Bonavita, 60 Aouchnet Avenue, Springfield, Mass.

ENGINEERS

Permanent Salaried Positions are open at Saginaw Steering Gear Division of General Motors Corporation

TOOL DESIGNERS
PRODUCT DESIGNERS
PLANT ENGINEERS
TIME STUDY ENGINEERS

Interesting Work on a Variety of Products on an Expanding program for Civilian and Defense needs. Send Detailed Resume to:

CARL U. FRANCE, PERSONNEL DIRECTOR
SAGINAW STEERING GEAR DIVISION, G.M.C.
SAGINAW, MICHIGAN

POSITIONS VACANT

ENGINEERS WANTED for Highway and Bridge Design work in Middle Atlantic State. Many permanent positions. Full information, references and salary requirements requested. P-4080, Engineering News-Record.

FIELD SUPERINTENDENT—Thoroughly experienced in highway construction and maintenance work. Permanent position. Southern California. Write full qualifications, references and salary desired. Road Commissioner, Court House, Santa Barbara, California.

GENERAL SUPERINTENDENT — Marine and Heavy Construction. Permanent position. Location Southern New England. P-3974, Engineering News-Record.

PERMANENT POSITIONS open to engineers experienced in highway and bridge design and layout. Excellent opportunities for Specification Writers, Chief Draftsman and Squad Leaders. Phone or write for interview—Howard, Needles, Tammen & Bergendoff, 55 Liberty St., New York 5, N. Y.

(Continued on page 102)

WANTED

Designing Engineers for Structural Steel or Reinforcing Steel

Experienced in design for architects and fabrication company. Excellent opportunity for qualified men. State qualifications, availability, reference and salary desired.

ROBBERSON STEEL COMPANY
P. O. Box 1675 Oklahoma City, Oklahoma

EXECUTIVE DESIGN ENGINEER

To head Petroleum, Chemical and Petro-Chemical Design Section of long established, progressive engineering-construction firm with headquarters in Southwest and operating internationally. Compensation to suit experience and ability. Must have proven record in directing work of others and dealing with major clients. Age minimum 35. Submit recent photograph and full education and business history. Replies held in strict confidence. Our staff advised of this inquiry. P-4061, Engineering News-Record, 520 N. Michigan Ave., Chicago 11, Ill.

ENGINEERS TO RELOCATE

M.E.'s or Chemical Engineers, experienced in design or Construction. All expenses, and Fee Paid, 5 day wk, rapid promotion.

Chief Project Engineer, design	$8,400
Project engineer, installations	$7,200
Field Engineer, erections	$7,200
Cost Control—field maintenance	$7,200
Project engineer, coordinator	$7,200
Area Supervisor, boiler house	$7,200

CLEVELAND VOCATIONAL BUREAU
Wire or Phone Main 1-6700 Cleveland, Ohio

ENGINEERS
HIGHWAY DESIGN AND CONSTRUCTION

DEPARTMENT OF PUBLIC WORKS
MONTGOMERY COUNTY, MARYLAND

Design Engineer	$5460-$6552
Highway Designers	to $5250
Highway Draftsmen	to $3444
Instrumentmen	$3444 to $4090
Rodmen	$2982 to $3536
Materials Engineers	to $5250
Highway Inspectors	to $5250

Graduate Engineers without experience—$3906

With one year experience in highway field—$4137

Permanent employment, State Merit System, non-political, opportunity for advancement, paid annual and sick leave.

Write Personnel Office

Court House Rockville, Maryland

Permanent Positions Open to

ENGINEERS

... after training at
full-time pay ... as

Consultants in Fire Protection Engineering

to top U. S. and Canadian industry. Usual pension and other benefits. Excellent opportunities; fast-growing engineering organization.

Write complete qualifications to:
P-2807, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

WANTED

MECHANICAL ENGINEER

Established consulting firm, New York area, desires Mechanical Engineer, capable supervising starting, testing, operating and correcting troubles of steam-electric station equipment. Plant betterment work involving considerable travelling. Technical education, and plant operating or betterment experience required. State education, experience and salary desired.

P-3630, Engineering News-Record
330 W. 42nd St., New York 36, N. Y.

WANTED
CITY ADMINISTRATOR

City of San Carlos, Calif.

(Pop. approx. 16,000) invites applications

Salary open depending upon the experience and qualifications of man selected. City Administrator experience preferred. Contact City Clerk, City Hall, San Carlos, California, for application and qualifications. Closing date for receipt of applications closes May 31st.

DRAFTSMEN—Experienced Detailers on Structural Steel and Miscellaneous Iron. State experience, qualifications and hourly rate expected in first letter.

TAYLOR & GASKIN, INC.
2210 Park Ave. Detroit 1, Mich.

WANTED

COST ENGINEER

Experienced construction Cost Engineer needed for work on large steam-electric station construction projects. Location . . . south or southwest. Submit resume of experience, education and salary desired.

Box **P-3629**, Engineering News-Record
330 W. 42nd St., New York 36, N. Y.

WANTED

Detailers, checkers and Squad Bosses for Structural Steel or Reinforcing Steel

Experienced in making shop details for fabrication company. Excellent opportunity for qualified men. State qualifications, reference and salary desired.

ROBBERSON STEEL COMPANY
P. O. Box 1675 Oklahoma City, Oklahoma

STRUCTURAL DETAILERS - CHECKERS

Permanent jobs for good men with experience in building work. Apply by letter giving resume of experience and salary desired.

NON-DEDUCTIBLE INS.
FAMILY HEALTH PLAN
PROFIT SHARING PLAN

FT. WAYNE STRUCTURAL STEEL CO.
4920 N. CLINTON ST.
FT. WAYNE, IND.

WANTED
PLANT ENGINEER

A new Petro-Chemical Plant located in the Panhandle of Texas is seeking a Plant Engineer with considerable experience in the design and installation of Pressure Vessels, Fractionating Columns, Pumps, Turbines, Compressors, Boiler House, Piping Systems, Instrumentation, and Related work.
This is a Permanent position in a Plant presently being constructed.
In reply, give complete work experience, educational background, and personal data. Address replies to:

Divisional Personnel Superintendent
CELANESE CORPORATION OF AMERICA
Box 148, Bishop, Texas

SENIOR DRAFTSMEN
AND
ENGINEERS

A progressive expanding chemical manufacturing company has several fine openings on its staff for properly qualified men.

SENIOR DRAFTSMEN with experience in chemical or processing plants.

ENGINEERS for chemical equipment design, should know structural supports and piping layouts. M.E. or Ch.E. with at least five years' experience.

Please send resume of experience and education with first letter to

J. T. BAKER CHEMICAL CO.
Phillipsburg, N. J.
***Attention:* J. L. METZENDORF**

CONSTRUCTION IN EUROPE

Available executive Civil Engineer, registered, 25 years diversified domestic and foreign heavy construction experience. Negotiations, design planning, supervision, etc. Recently completed one year European assignment. Fluent French, German. 1-A References.

PW-3908, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

POSITIONS VACANT

(Continued from page 101)

STRUCTURAL DESIGN Engineer. Must be experienced and capable of assuming design responsibility in steel and reinforced concrete for large commercial and industrial buildings. Real opportunity for right man with large Architect-Engineer office located in the Pacific Northwest. **P-4131, Engineering** News-Record.

STRUCTURAL STEEL **Detail** Draftsmen and Checkers. **All types of** Structures. Vacation, group insurance, good working conditions. Only top quality men. Send complete written information. Bristol Steel **& Iron Works, Inc., Bristol, Virginia-Tennessee.**

STRUCTURAL STEEL Detail **Draftsmen and** Checkers. All types of Structures. **Vacation** and bonus plan, group insurance, good working conditions. Only top quality men. Send complete written information. Samborn, Steketee and Associates, 1214 Cherry Street, Toledo 4, Ohio.

SUPERINTENDENTS OF **Construction at $5450** per annum to supervise construction of a school building. 13 vacancies. Six years building construction experience including 3 years supervisory construction of large buildings required Write, phone or call in person at Board of Education, 49 Flatbush Ave. Extension, Brooklyn, N. Y. Main 5-6120, Ext. 2.

WANTED: BRIDGE **designers with office and** field experience by consulting engineering firm in Pennsylvania. Give complete details and salary desired. P-4099, Engineering News-Record.

WANTED EXPERIENCED Construction Superintendent for buildings, utilities and heavy construction. Growing contractor offers excellent opportunity for the right man. Must be able to take complete charge, schedule and procure materials, handle field work, and maintain client relations. Write advising experience, freedom to travel, and include references. P-4122, Engineering News-Record.

WANTED QUALIFIED **Building Construction** Estimator preferably a college graduate in architectural or civil engineering. A permanent position for the right man. Please give experience, references and salary desired. Location: Texas. P-3907. Engineering News-Record.

WANTED TWO experienced field-timekeepers. Excellent opportunity with growing contractor. Must handle payrolls, insurance, materials and office end of site operations. Write advising experience. P-4125, Engineering News-Record.

YOUNG CIVIL Engineering Graduate with some experience in maintenance of track and track equipment for Railroad Department, large Copper Company, Chile, South America. 3-year contract. Transportation both ways and salary while traveling paid by Company. In reply give complete details. P-3934, Engineering News-Record.

EMPLOYMENT SERVICE

WANTED—ENGINEERS, Designers, Draftsmen-Structural, Piping, M.E., C.E., E.E. and Industrial, also Teachers and Chemists. Cleveland Engineering Agency, 1132 E. 9, Cleveland.

POSITIONS WANTED

CIVIL ENGINEER graduate, advanced degree, licensed, 7 years experience hydraulics and related work, desires position eastern area. PW-3956, Engineering News-Record.

CONCRETE SUPERINTENDENT 29 years in concrete field Batch, crushing and precast plants Placing and handling of concrete. Heavy Construction, foreign or domestic. PW-4150, Engineering News-Record.

(Continued on page 103)

AVAILABLE
PROFESSIONAL ENGINEER

Civil sanitary. Age 40. College graduate, 15 years U. S. and foreign experience. Design, operation and maintenance of water supply, sewerage and municipal engineering projects and technical administration of environmental sanitation program in one of the world's largest cities. Returning to U. S. in June to seek permanent executive or professional position with partnership probabilities. Salary $12,000.

PW-4142, Engineering News-Record
330 W. 42 St., New York 36, N. Y.

POSITIONS WANTED
(Continued from page 102)

CONSTRUCTION EXECUTIVE-Project Manager Registered Prof. Eng. C.E. Responsible management all phases general contracting. Experienced difficult foundations—caissons—hydraulic structures—cofferdams; Industrial buildings; multiple housing; hospitals; public works. Qualified Gen'l Superintendent estimating, purchasing, subcontract management. Present location midwest; will consider location in U. S. only. PW-4117, Engineering News-Record.

EXECUTIVE CONSTRUCTION Engineer, long experience, estimates and supervision heavy construction including foundations, dams, docks, tunnels, especially difficult subaqueous structures. PW-3497, Engineering News-Record.

GRADUATE ELECTRICAL Engineer, Canadian, age 37, experienced in design and construction of large hydro-electric, transformer and distributing stations wants interesting work anywhere in this or industrial field. Great capacity for work. Will accept employment on trial basis if future promising. Present employment resident electrical engineer at 272,000 H.P. hydro-electric project. Available May-June, 1952. PW-4050, Engineering News-Record.

KEY DRAGLINE and Shovel operator, knows equipment capable of Supervising on earth filled dams, levees, grading, drainage & coal stripping. Desires permanent work with Sound company. Twenty Five years experience. PW-4161, Engineering News-Record.

PROJECT ENGINEER, Experienced in management of Design of substantial programs: Structural, Hydraulic, Airport, Sanitary, and Industrial. Age 47, M.I.T. Degree in Civil Engineering. Registered Professional Engineer,, Available for challenging project. PW-3972, Engineering News-Record.

PROJECT MANAGER-Supt. Qualified as journeyman in four Trades before becoming C.E. Lic. Professional Engineer, Michigan and New York. Extensive background in domestic and foreign work. Able to meet any prepared schedule and reduce unit costs. Reviews plans and details of all trades to assure coordination in the field. Cost plus work not preferred. English-Scotch-Dutch extraction. Desires position of responsibility commensurate with authority on Housing, Hospitals, Industrial Construction and Bridges to $15,000,000.00. Enquiries considered confidential. PW-4073, Engineering News-Record.

SANITARY ENGINEER: graduate with Master's Degree, member ASCE, registered professional engineer, seven years progressive experience in research, design, construction of waterworks, sewerage hydraulic structures and utilities. Foreign service in Far East, Pacific and Mexico. Single, speak Spanish. Prefer foreign assignment in public health, sales engineering or sanitary work. Available July. PW-4156, Engineering News-Record.

SUPT. ENG., "Clerk of Work" available. Mature experience. Excellent references. PW-4157, Engineering News-Record.

WANTED

ANYTHING within reason that is wanted in the field served by Engineering News-Record can be quickly located through bringing it to the attention of thousands of men whose interest is assured because this is the business paper they read.

FOR SALE
1 CATERPILLAR # 12 Grader
2 Years Old — 8T Model
A-1 Condition — Looks like new
P. O. Box #95 Perkasie, Pa.
Phone 2081

FOR SALE
Complete Shovel Attachment
For Marion 450 Gas-Electric Shovel
Used Very Little
KUCHAR BROTHERS
Montvale New Jersey

OUTBOARD PROPULSION UNIT
Murray & Tregurtha 02-D Harbormaster having GM 6-71 Diesel. Used 30 hours. This unit on a work float makes complete 165 HP shifter boat. For Sale at 1/3 replacement price.
R. BAGGALEY
515 So. Aiken Ave. Pittsburgh 32
SCHENLEY 1-7000

STRUCTURAL ENGINEERING
ARCHITECTURAL ENGINEERING
OUR COURSES of instruction by mail HAVE HELPED THOUSANDS to better positions and to pass State Board Examinations. *Forty-first year. Write today.*
WILSON *Engineering Corp.*
College House Offices - HARVARD SQUARE, CAMBRIDGE, MASS.

CONSTRUCTION MANAGEMENT
Superintendents and Project Managers Training Course
All instruction by mail. Send today for sample lesson and complete details
GEO. E. DEATHERAGE & SON
5 E. Preston St. Baltimore 2, Maryland

FOR SALE OR RENT:
One (1) 45 ton Lorain Truck Crane
One (1) Gradall
BUCKS COUNTY CONSTRUCTION CO.
Monroe Street Penndel, Penna.
Phone: Langhorne 3795

FOR SALE
Ready Mixed Concrete Plant Complete
212 cubic yard Butler Bin. 5 Aggregate and 2 cement compartments. Cement and Aggregate elevaturs. Central plant mixer, also flop gate and shute for transit mix. Itemized list sent on request.
BOX 333
New Albany, Indiana, Phone 5-6605

FOR SALE
Three (3) MIXERS—3-Yd. REX Hi-Discharge.
Two new 1949—Mounted on WHITE Chassis.
One new 1950—Mounted on MACK Chassis.
A-1 Condition. Price . . . $18,000.00 for Lot.
Washington Engineering & Const. Co.
P. O. Box 1947, Washington, Pennsylvania

SURVEYING INSTRUMENTS
USED • REBUILT • SALE • RENT • REPAIRING

FROM STOCK
Brand New & Rebuilt
TRANSITS & LEVELS
Fully equipped modern shop—all makes and models repaired — all work guaranteed — instruments rented
Midwest Representative: W. & L. E. Gurley
NATIONAL BLUE PRINT CO.
Established 1914.
210 S. Canal St. Chicago (6), Ill.

GURLEY
SURVEYING INSTRUMENTS
GLASS RETICLES
Replace your platinum wire or spider web reticle with the new Gurley *glass* reticle. Metallic filaments deposited on Gurley glass reticles are sharply defined—equally visible against either very bright or dark backgrounds.
Patterns to suit every surveying need.
W. & L. E. GURLEY
Union Plaza Troy, N. Y.

Our Craftsmen do
INSTRUMENT REPAIR AND OVERHAUL

- Complete department—handles all makes.
- Experienced craftsmen do all work.
- Includes thorough overhaul, cleaning, oiling and adjustment.
- Precision work guaranteed.

DAVID WHITE COMPANY
317 W. Court St. • Milwaukee 12, Wis.

INSTRUMENTS FOR RENT
We rent transits and levels on a monthly or yearly basis. Reasonable rates. All instruments are fully guaranteed in first class working order.
DAVID WHITE COMPANY
317 W. Court St. • Milwaukee 12, Wis.

ALL MAKES
RE-BUILT
REPAIR
RENT
REAL EXPERTS
BUFF
69 Dey St., New York

SPECIALIZED REBUILDING
of surveying and engineering instruments
All makes and models expertly repaired in modern shop. All work guaranteed
USED REBUILT INSTRUMENTS
for sale or rent
ROY D. HICKERSON
8 N EDMONDSON AVE INDIANAPOLIS 19 IND

TRANSITS AND LEVELS

New or Rebuilt
Sale or Rent
Headquarters for REPAIRS — any make — Factory Service. We will also *buy* your old instruments or take them in *trade*.
A complete line of Engineering Instruments and Equipment for field or office. Write for catalog N.R. 2-5.
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An Invitation ...

To Use the World's Largest Equipment Rebuilding Facilities

Where rebuilding is a business—with over 25 years of experience on all types of construction equipment—where highly trained mechanics with precision tools—can build back into your equipment many years of additional and efficient usefulness.

Naturally, the thoroughness employed in rebuilding our own equipment would be used on yours.

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CAMP HILL, SUBURB OF HARRISBURG, PA.
BRANCH OFFICES: PHILADELPHIA, PA. • SYRACUSE, N.Y.

L. B. SMITH INC.

New and Used Equipment News

Prepared Monthly by Ed Woolford at Camp Hill, Pa.

VOL. 1 NO. 2

AIR COMPRESSORS

Gardner-Denver 500 cu. ft. diesel, new condition.
Gardner-Denver 365 cu. ft. Diesel Rebuilt.
Gardner-Denver 160 cubic foot gas powered compressor on 4 steel wheels.
Ingersoll-Rand 105 cubic foot, Waukesha gasoline power, on two rubber tires.
Schramm 105 cubic foot gas powered compressor on 4 steel wheels.
Pennsylvania 12" x 10" class 3A single cylinder, 355 cubic foot P.D., flat belt driven 50 HP slip ring motor.
Worthington two-stage, water-cooled, vertical 250#, 60 CFM, new condition.
Paving breakers, jackhammers, wagon drills, tie tampers.

QUARRY EQUIPMENT & BINS

4024 Cedarapids roll, rebuilt.
Cedarapids Rock-It plant with 2025 jaw, 3033 mill. New.
Cedarapids 1236 Model 6C plant, new.
4033 Cedarapids Hammermill, rebuilt.
1030 Good Roads. Reconditioned.
10x7 Allis-Chalmers Blake type jaw crusher.
#1 Cedarapids Kubit impact breaker.
42" x 10' apron feeder, rebuilt.
4' x 6' Kennedy Van Saun single deck.
3' x 6' Kennedy Van Saun triple deck.
42"x10' Cedarapids, Rebuilt
2—15 cu. yd. Cedarapids sand drags, new.
16" x 90' bucket elevator.
60-ton, 2-compartment, 8'x18' storage bin with clamshell gates.
100-ton, 2-compartment, 13'x23' storage bin with clamshell gates.
Special bins to your specifications.
Conveyors—18"—24"—30"—36". Also belt.

TRUCKS—TRAILERS

1½-ton Ford with any body.
2½-ton GMC, rebuilt.
2000-gallon tanks on semi-trailer mounting.
New and rebuilt dump bodies.

GENERATORS & LIGHT PLANTS

1½ KW to 125 KW, alternating and direct current gasoline and diesel powered.

SHOVELS—CRANES

Lorain L-50, 1-yd. diesel. New condition.
Brownhoist 1-yd. gas shovel & crane.
Lorain TL-20 diesel powered ½ yd. shovel & hoe.
Link-Belt LS50 gas ½-yd. shovel & hoe.
P&H Model 150, ½-yd. crane.

SHOVEL & CRANE ATTACHMENTS

Lorain TL-20 shovel attachment.
Lorain L-41 Chain Crowd Shovel Attachment. New Condition.
Lorain 40 Hi-Lift shovel attachment.
P&H 203 shovel attachment.
Chain crowd Lorain 30A shovel attachment.
Bucyrus-Erie 1½-yd. rock bucket.

Backhoe Buckets & Attachments

Lorain TL-25 hoe attachment, new.
Lorain 30 hoe attachment complete.
¾-yd. Lorain, 40, LBS #6105. 44" cutting width.
26" outside width solid bottom type LBS #4377, good condition.
¾-yd. Amsco 40" cutting width, LBS #8101.

CLAM—DRAG—SCRAPER BUCKETS

NEW TAGLINES

McCaffrey Model 648 for 1¼ to 2-yd. crane.
McCaffrey Model 636 for ¾-yd. to 1-yd. crane.

SHOVEL DIPPERS

Lorain 41, ¾-yd. LBS #8600, rebuilt.
New Lima 1-yd. Amsco, LBS #2295.
Bucyrus-Erie 1¼-yd. gas air, LBS #3782, fair.
Lorain 75B, 1½-yd. manganese bucket, LBS #8538.
Lorain 75B, 1¼-yd. extended lip, 1¾-yd. LBS #2260.
Pettibone-Mulliken 2-yd. Lorain 82 or 820, manganese, LBS #5361.
Pettibone-Mulliken 2-yd. for 3500 Manitowoc LBS #5763.
Esco 2½-yd. cast weld dipper with bail & teeth.

CONCRETE ROAD BUILDING & MISCELLANEOUS CONCRETE HANDLING EQUIPMENT

Concrete Equipment

Jaeger type "L" double screed finisher, 10½'-12½', rebuilt.
Heltzel 10'-12' finisher, rebuilt.
Blaw-Knox gas-electric finisher, 10½'-12½', rebuilt.
2 Koehring 10'-12' finishers, rebuilt.
1220'—Heltzel 9"x8" road forms with stakes.
R.B. Fine Grader for 21' width, rebuilt.
Cleveland formgrader, new 1944, rebuilt.
Corr formgrader, new 1944, rebuilt.

TRACTORS

1—Ford Dearborn rubber tired with hyd. front end loader and hoe attachment.
1—Terratrac with front end shovel loader.
1—Terratrac with angledozer blade.

WELL DRILLS & TOOLS

Sanderson-Cyclone #42 well drill, new.
Sanderson-Cyclone #44 well drill, new.
Bits—Stems—Bailers—Sockets—Etc.

PUMPS

New Layne Bowler type 18 deep well pump with right angle gear drive. 3000 GPM at 120' TDH.
Used and rebuilt pumps, all sizes, gasoline, electric or diesel.

GRADERS

Austin Western 77 tandem drive, scarifier, 12' blade, gas power, hydraulic controls.

GASOLINE AND DIESEL ENGINES

Buda, Hercules, Hill diesels, rebuilt.
New and rebuilt Murphy diesels, ME-4 & 46.
GM 6 and 12 cylinder diesels, practically new.

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IMMEDIATE SHIPMENT

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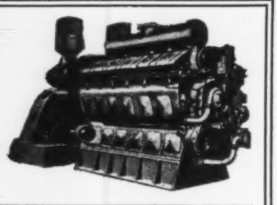
A.C.—50 AND 60 CYCLES

VARIOUS VOLTAGE



A PARTIAL LISTING OF OUR INVENTORY

KVA	Make	Model	HP	RPM	KVA	Make	Model	HP	RPM
1875	Fairbanks Morse	33F16	2000	300	375	Enterprise	DSG-6	450	450
1420	Fairbanks Morse	38D8⅛	1600	720	330	Superior	KNA	396	514
1250	General Motors	16-278A	1600	720	312	General Motors	8-268A	450	1200
937.5	General Motors	12-567	1080	720	312	Clark	MD-4	375	327
625	Alco	6-12½x13T	750	600	125	General Motors	3-268A	150	1200
425	Baldwin	VO-6	510	450	75	General Motors	6043C	90	1200
400	Buckeye	80	480	600	62.5	Int'l Harvester	UD-18	76	1200

D.C. UNITS ALSO AVAILABLE

A. G. SCHOONMAKER COMPANY, INC.
DIESEL DIVISION, 50 CHURCH ST., NEW YORK 7, N. Y.

SHOVELS—CRANES—DRAGLINES
Buc-Erie 51-B 2 yd. Diesel Shovel 1949.
Manitowoc 1¾ yd Shovel-Drag. New Shovel front.
P&H 855-B 1½ yd Shovel-Crane-Drag. Diesel.
Northwest Model 80-D 2½ yd Diesel shovel.
Lorain 820 1¾ yd. Shovel-Crane. Diesel, 1947.
Lorain Motocrane MC4 15-18 tons capacity.
Koehring 605 1½ yd. Diesel Shovel.
Lima 1201 std. Diesel Shovel, 3½ yds.
Lima Paymaster 1 yd. Diesel Shovel.
Link-Belt K-520. Diesel Shovel. 3 yds.
Link-Belt K-595 Dragline, 2½ yds. Diesel.
TRUCK CRANES
Lorain Moto-Crane MC4- 15 to 18 tons. Rebuilt.
Koehring 304 20 tons cap. 80' bm. Excellent.
Michigan Model TLDT 12 tons 50' boom.
General 307, 12 tons. Self propelled 60' Bm.
P&H 255-A 20 tons 80' bm. Mack chassis.
CONCRETE PLANTS—BINS & SILOS
B-K 100 ton agg. bin 400 bbl. cement. Complete.
Butler 250 bbl. cement bin elev. screw conveyor.
Johnson 4 compt. 300 ton agg. 590 bbl. cement.
Butler 310 bbl. cement bin 1 yd batcher. Elec.
Cement bin 400 bbls. with batcher. NEW.
Agg. bin 100 tons 3 cpts. 2 yd weighbatcher. New.
Heltzel 3 compt. agg. bin 85 tons w/weighbatcher.
ASPHALT PLANTS
Cedar-Rapids Model FA Port. Excellent.
Cummer 1500 lbs. Semi-Port. Very good.
Std. 1500 lbs. Batch. Sta. Bit.
Simplicity Model S-100. Diesel powered.
Madsen 4000 lbs. Used but little. Excellent.
B-G Model 840-830 Maintenance Plant. Complete.
Hetherington-Berner Heavy Duty Moto-Paver.
Cedar Rapids Travel Mix Plant 100-150 tons.
STIFF LEG AND GUY DERRICKS
Steel 35' stiff leg derrick 100' boom.
American 20 ton stiff leg derrick 90' boom.
Stiff leg derrick 15 ton 100 ft. boom.
American 20 ton Guy derrick 100 ft. boom.
CONCRETE MIXERS AND PAVERS
Jaeger BP-5 Asphalt Paver & attachments.
2 Ransome 34-E Dual Drum Pavers Diesel.
Rex 28-S Builders Mixer, Elec. New 1947.
Koehring 4 yd tilting mixer complete electric.
ROAD FORMS
Blaw-Knox and Heltzel 8100 ft. 9"x9"; 10,000 ft. 8"x8" and 3000 ft 10"x8".

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Cable RICHWALSH COrtlandt 7-0723-4

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PORTABLE — STATIONARY
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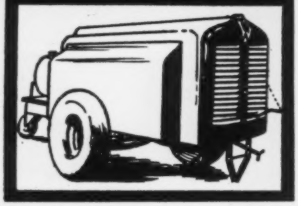
596 CFM - 100= - 100 HP. Model 420 Base Mounted with 100 HP-G.E. Tri/Clad 3/60/220/440. Built-In Motors. Complete with self contained cooling system.

NO FOUNDATION REQUIRED
- LIKE NEW -
- IMMEDIATE SHIPMENT -

YOU CAN PAY MORE
BUT
YOU CAN'T BUY BETTER

American Air Compressor Corp.
Dell Ave. & 48th St., North Bergen, N. J.
SINCE 1902



PORTABLE CRUSHING PLANTS: Pioneer 56A, 30 x 42 Jaw Crusher, with or without 54VA and 300WA units. 1—Cedar Rapids large capacity portable Plant.

CLASSIFIERS: 6—Akins and Wemco 54" and 78", single screw, double pitch, weir type, 220/440 volt motors, all in new condition. Three of the above located near Reno, Nevada. 2—Dorr 8' x 39' rake, one with 16' and one with 22' bowl. New condition.

DRYERS or KILNS: 2—10 ft. x 90 ft., heavy duty, with or without auxiliary equipment, condition like NEW. One located in Minnesota.

DIESEL MOTOR: 122 H.P. Caterpillar D13000 complete with clutch, V-belt pulley and spare parts.

MINE HOISTS: 150 H.P., 6'6" dia., 6'8" face; 250 H.P., 72" dia., 48" face; 200 H.P., double drums, one clutched, 8 ft. dia., 4 ft. face. All 3 phase, 60 cycle, 2200 volt, with control equipment. Head Frame for double shaft 16'9" x 17'2", height 55 ft., with or without 8 ft. dia. sheaves for 1-½" rope. Other Hoists 100 H.P. to 1050 H.P., single and double drum with electrical equipment.

ELECTRIC MOTORS: 2—NEW 1000 H.P., 188 RPM, 2300 volt, drip proof, with automatic switch gear. UNUSED. 1—950 H.P. Hoist Motor, 3 phase, 60 cycle, 2200 volt, 443 RPM, with all control equipment.

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Steam Pile Hammers and Extractors
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Used only on one job
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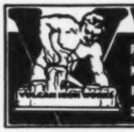

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PILE HAMMERS AND EXTRACTORS
NEW OR FACTORY REBUILT
FOR SALE • • • FOR RENT
327 N. BELL AVE., CHICAGO, ILL.

FOR SALE

3 yd Lima 1201 Dragline 120' bm. 1947
40 ton Orton Diesel Locomotive Crane
30 ton Ind. Brownhoist Gas Loco. Crane
Clyde 45 ton Elec. Gantry Crane new 1949
Manitowoc 2000 Crane 1½ yd 80 ft. bm.
65 ton Whitcomb Diesel Elec. Locomotive
8¼x10 Clyde 3 Drum Steam Hoist
Rex 200 Single Pumpcrete. Gas powered
Northwest 80D 2½ yd. Diesel Combination

MISSISSIPPI VALLEY EQUIPMENT CO.
509 Locust St. St. Louis 1, Mo.

SALE OR RENT

1—TD-9 Front-end Loader 1950
1—10-Ton Link Belt YC-9 Cargo Crane
1—25-Ton Link Belt HC-90 Truck Crane 120' Boom
1—20-Ton Bay City Truck Crane 40' Boom
1—35-Ton Davenport Diesel Electric Loco.
1—70-Ton GE Diesel Electric Loco.
2—No. 6 and 80-D Northwest Shovels
1—D-8 2U with FP 17 Yd. Scraper—New 1950—1800 hrs.
1—Northwest 25 Shovel Attachment
1—6-Ton Huber 3W Roller gasoline
1—10-Ton Stiff Leg Derrick
1—10-Ton Orton Diesel Loco. Crane
1—10-Ton Industrial Brownhoist Oil Fired Loco. Crane. New 1943

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5" I x 40'— 8 H x 31 40'/48'
6" I x 40'— 10 H x 42 40'/48'
8" I x 40'— 10 H x 49 40'/48'
12" I x 40'— 10 H x 54 40'/48'
8" C 11.5 x 40'— 10 H x 57 40'/48'
12" C 25 x 40'— 12 H x 53 40'/48'
15" C 33.9 x 40'— 12 H x 65 40'/48'
6 H 20 x 40'— 12 H x 74 40'/48'

Also Large Stock New & Used Wide Flange & Std. Beams, Angles, Reinforcing Bars

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Rex 34E double drum paver #GD229 with hydro-cycle control, standard water storage tank, 35' distributing boom, controlled door bucket with 10' clearance at end of boom, powered by Waukesha Model 145GK 6 cylinder, 116 H.P. gasoline engine #720945, complete with auxiliary water pump **$24,788.00**

4700 ft. Heltzel steel road forms (500 — 10' long) with 3 wedged stake pockets and 1 V-type slide lock per 10' section (without stakes)..**$1.60 per ft.**

1 Jaeger type "X" diagonal screed finisher #50X017 for 10'-12' widths, set for 12' width crown, equipped with quick crown change front and rear screeds, two #32109-2 double flanged traction wheels, two #32127-1 flat rubber tired traction wheels, two extra #32110-1 cone tread traction wheeds, and powered with Continental F-140 engine #19060. Now set for 15' width crown, with necessary attachments......**$5,856.00**

40—Turnomatic cement boxes **$3,200.00**

44—Batch boards for trucks..............**$800.00**

OTHER PAVING EQUIPMENT

1—Cleveland form grader #141X45, powered by Hercules gasoline engine #JXC1318706—can be set 12" to 18" **$1,700.00**

1—Koehring longitudinal finishing machine #LF799, powered by Hercules gasoline engine—can be set minimum 9' and maximum 15' **$3,000.00**

1—Blaw Knox spreading machine #SA3223, powered by Continental gasoline engine #F2263035 —can be set minimum 9' and maximum 15' **$3,800.00**

1—Buckeye fine grader powered by 1 XB-5 Hercules engine—Serial #338, Engine #1XB-5-692706—set at 12'. Can be extended to 15' but we do not have necessary attachments.**$3,500.00**

EXCAVATING AND GENERAL EQUIPMENT

5—1949 Ford dump trucks (F8) #98EQ25501; #98EQ24979; #98EQ27153; #98EQ27196; #98-EQ26185 ....**$1,500.00 ea.**

1—1944 Chevrolet passenger bus #MR12-6410, seats 30, like new **$1,200.00**

1—Caterpillar D-8 Tractor, hydraulic blade, Ser. #2U9679 ....**$17,000.00**

1—L-P LeTourneau Pan (Scraper) clean, good tires, Ser. No. 523908LPD...........**$4,625.00**

1—Bucyrus-Erie 22-B Shovel, shovel front, UD-16 Motor Serial No. 51796, together with 1 set used tracks $750.00 and 1 used crane boom $750.00 included **$14,000.00**

4—Super-C Tournapulls with pan like new. Moved approximately 125,000 cu. yds. dirt each. Above price includes approximately $3,000.00—in new parts ....**$8,000.00 ea.**

1—C90 Autocar and 30-ton equipment trailer both in excellent condition **$3,000.00**

2—C-11 Tournomatic Tournapulls like new. Moved approximately 300,000 cu yds. dirt each. Above price includes approximately $7,000.00 in extra tires ....**$15,000.00 ea.**

1—Caterpillar grader Model No. 11, Ser #6K823 **$2,000.00**

1—3/4-yard Lorain Truck crane on 10-wheel Mack, Ser. No. 468045-10072 ....**$6,800.00**

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1947 P&H 225 A 3/4 yd. Crawler Shovel

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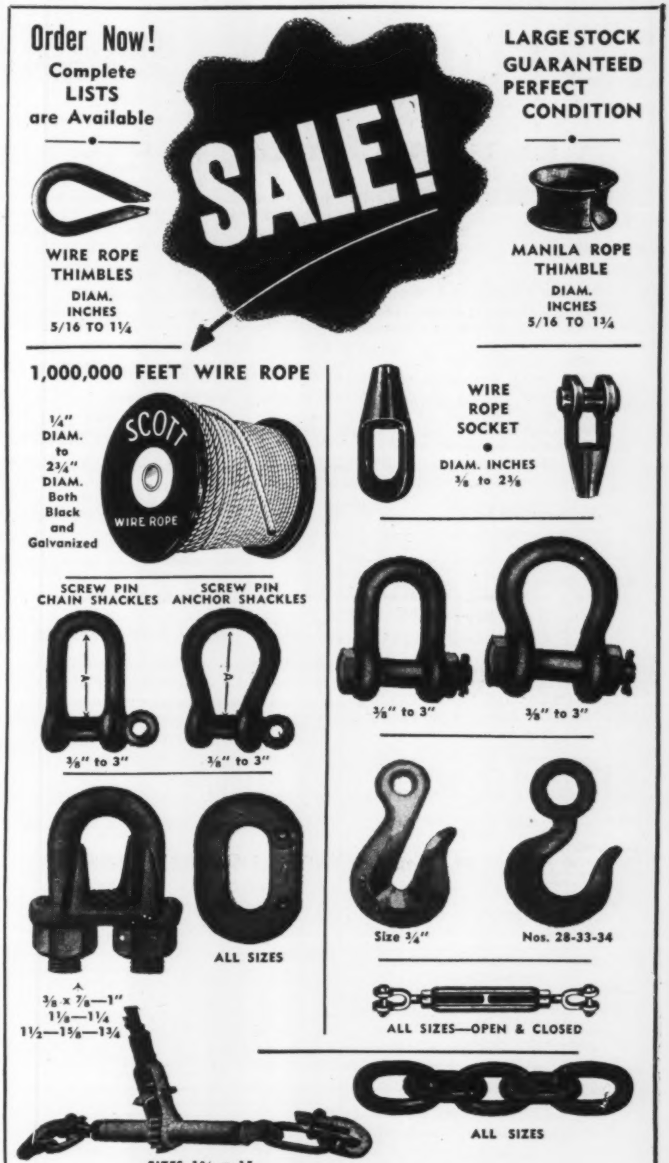
EVergreen 3-5000



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5/16 TO 1 1/4

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1/4" DIAM. to 2 3/4" DIAM. Both Black and Galvanized

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3/8 to 2 3/8

SCREW PIN CHAIN SHACKLES 3/8" to 3"

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3/8" to 3"

3/8" to 3"

3/8 x 7/8—1"
1 1/8—1 1/4
1 1/2—1 5/8—1 3/4

ALL SIZES

Size 3/4"

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ALL SIZES

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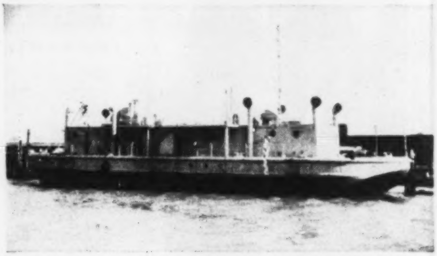

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1—Navy steel house lighter, formerly Navy Net Tender, 111 long x 34' wide x 11' deep. Excellent condition. Dravo built 1944. Crew space for 20 men, dining room, freezing compartment with freezing unit compact, two large work rooms. Price $50,000.00. Norfolk, Va.

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2—100 K.W. Superior Diesel Generator Sets AC or DC GBD-8-5½x7—1200 r.p.m. Delco Generator 152 H.P. 120/240 volts—417 amps complete with switch gear. Serial Nos. 23568 and P28406. Price $3,000.00 each. Arlington, Va.

1—Steel Spud, 1" wall, 22" O.D., 55' long with point and head sheave.

1—Steel Spud 1¼" wall, 23' O.D., 55' long with point and head sheave. Both spuds in new condition, approx. wt. 10 Tons each. Price for both spuds $7,500.00. Arlington, Va.

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FOR SALE

6 TD24 INTERNATIONAL Tractors, 1950 Model, with/without bulldozer blades.

1 BUCKEYE FINEGRADER, practically new.

2 SEAMAN PULVIMIXERS, 1949, self-propelled.

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8000 Ft. 36 In. 42 In. 60 In.

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10 Allis-Chalmers 6' x 14'—2 Deck Rypl-Flow with Car Loads ⅛ in. to 4 in. Square opening extra Screen.

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10 Type E for 36 in. Belt

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4—7 ft. x 30 ft. Type DSFX

CRUSHERS
42 x 48 AC Superior Jaw
48 in. Telsmith Gyrasphere
5½ Symons Short Head Cone
24 x 36 Farrell Jaw

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LOCOMOTIVE
1—Plymouth 6 Ton Gas—36" Ga.—Like New.
1—Brookville 10T-30" Ga. Diesel—Like New.
2—Whitcomb 15 Ton, 36" Ga.—Diesel.
1—Baldwin-0-4-0-50 Ton Steamer—Fine.
1—Plymouth 20 Ton Diesel—48" & Std. Ga.

LOCOMOTIVE CRANES—STEAM
Industrial—50 T. Type L.
1—Derrick Car—50 Ton.

19—Hopper Cars—15 Ton—36" Ga.
3—Hopper Cars—50 Ton. Excellent.
5—Flat Cars—50 Ton.
2—Conway Mod. 75 Muckers. #256 & 305. Bargains.
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American 30 Ton Stiffleg. New. Mod. 2036.

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Phone Sagamore 2-7132

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3—NORTHWEST Model 6

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Get Our Low Prices

100 Tons 8" x 36# Bearing Piles
100 Tons 10" x 42# Bearing Piles
100 Tons 12" x 53# Bearing Piles
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100 Tons 10" x 49# H-Beams
100 Tons 12" x 65# H-Beams

We can also furnish from stock I-Beams, Channels, Angles, and Plates.

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47-29 VAN DAM STREET
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NEW and REBUILT
STORAGE BATTERY

LOCOMOTIVES

1½ to 10 Ton — 18" to 58" Track Gauge
GREENSBURG MACHINE CO.
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6,500 (approx.) ¾" Richmond Tyloops, Tylags, and Washers in good condition. Price—60% of our cost.

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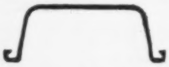

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Tagco Inc. 108
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Union Building & Construction Corp. 111
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Vangard Construction Corp. 111
Vulcan Iron Works 106

Walsh Co., Richard P. 106
Warren-Knight Co. 103
Washington Engineering & Construction Co. 103
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Bids: May 15, 1952

New York State Road Work

NOTICE TO CONTRACTORS: STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of the Highway Law, the Public Buildings Law, and special provisions for projects financed with federal aid funds, sealed proposals will be received until ten-thirty o'clock A.M., advanced standard time, which is nine-thirty o'clock A.M., eastern standard time on Thursday, MAY 15, 1952 by Henry A. Cohen, Director, Bureau of Contracts & Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y., for the following projects: Maps, plans, specifications and proposal forms may be seen and obtained at the office of the State Department of Public Works, Bureau of Contracts & Accounts, Albany, N. Y., and at the office of the District Engineers noted below, and may also be seen at the office of the State Department of Public Works, 270 Broadway, New York City.

The deposit for plans and proposal forms for each contract is indicated below. A refund will be made in full to bidders for the return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

County	Contract No.	Name	Miles	Type	Deposit	Estimated Cost of Work
DISTRICT No. 1						
G. L. Nickerson, Dist. Engr., 353 Broadway, Albany, New York						
Greene	FARC 52-24	Coxsackie Village, S. H. 5369 Coxsackie-Ravena, Pt. 1, S. H. 5198 Greenville-Coxsackie, Pt. 3, S. H. 1365 Proj. F-365(5)	0.99	Asph. Conc. Ty. 1A. Opt., Twin Conc. Box Br. 20′-8½″ Each	$14,000 Plans $10	$249,000
Saratoga & Warren	FASS 52-19	Corinth Bridge & Approaches (Co. Rd.) Proj. S-327(1)	0.34	Bit. Mac. Ty. 1 Pen. Meth. Cant. Deck Girder Br. 5 Sp. 630′	$35,000 Plans $15	$640,000
DISTRICT No. 5						
C. R. Waters, Dist. Engr., State Office Building, 65 Court St., Buffalo, N. Y.						
Chautauqua	FASS 52-6	Dunkirk-Middle Road (Co. Rd. 121) Proj. S-345(1)	2.54	Asph. Conc. Ty. 1A Opt = 2.50 Mi. Misc. Work = 0.04 Mi. 30′ Reinf./Conc. Slab Bridge	$10,000 Plans $10	$180,000
Chautauqua	R. C. 52-18 S. T. 52-4	Silver Creek Village; Central Ave., S. H. 9240 South Western Blvd., Pts. 9 & 10, S. H. 1852, Irving-Silver Creek, S. H. 5452 Silver Creek Connection	3.96	Asph. Conc. Ty. 1A Opt. = 2.85 Mi. Two Course Cem. Conc. Pave. = 1.08 Mi. Asph. Conc. Ty. 1A Opt. = 0.03 Mi. Widening	$37,000 Plans $15	$625,000
DISTRICT No. 8						
J. S. Bixby, Dist. Engr., Pleasant Valley Road, Poughkeepsie, New York						
Orange	PIP 52-1	Palisades Interstate Pkwy. Pts. 1 & 2	1.01	Grading = 0.17 Mi. 8″ Cem. Conc. Pavt. 48′ Var. Wide = 0.31 Mi. Asph. Conc. Ty. 1A, Opt. = 0.53 Mi. Hy. Sep. Rig. Fr. Arch 2 Sp. @ 63.5′ Ea. Hy. Sep. Rig. Fr. Arch 2 Sp. @ 42.71′ Ea. Rig. Fr. Arch Br. 22.33′ Sp.	$45,000 Plans $25	$812,000
DISTRICT No. 9						
F. W. Donovan, Dist. Engr., 71 Frederick St., Binghamton, N. Y.						
Delaware	52-BWS4-6-7	New York City Board of Water Supply Roads No. 4-6 & 7 (Pepacton Reservoir)	9.30	Bit. Mac. Ty. 1 Pen. Meth.	$90,000 Plans $25	$1,665,000
DISTRICT No. 10						
J. J. Darcy, Dist. Engr., Montauk Highway at Little East Neck Road, Babylon, N. Y.						
Bronx	FAMDE 52-3 FAMDEG 52-4	Major Deegan Expressway Extension Cont. 4 Proj. U. & UG 1082(10)	0.70	Grading, Paving & Misc. Work, Alterations to R. R. G. S. Struct. HGS-Cont. 2 Sp. I-Beam (Alpha) 118′-6½″ HGS Rigid Fram. 60′ 2¼″	$130,000 Plans $50	$2,350,000
Suffolk		Shinnecock Inlet	....	Beach Protection (Stone Jetty)	5% of Bid Plans $10	$819,000
Suffolk		Moriches Inlet	....	Beach Protection (Stone Jetty)	5% of Bid Plans $10	$315,675
Suffolk		Moriches Inlet (Pikes Beach)	....	Beach Protection (Hydraulic Fill)	5% of Bid Plans $10	$190,000

Special attention of bidders is called to "General Information for Bidders" in the proposal, specification, and contract agreement, and to the special provisions applying to projects financed with federal funds. Award of a contract is subject to the "Controlled Materials Plan" of the National Production Authority as well as to regulations issued thereunder.

Proposal for each contract must be submitted in a separate sealed envelope with the name and number of the contract plainly endorsed on the outside of the envelope. Each proposal must be accompanied by draft or certified check payable to the order of the "State of New York, Commissioner of Taxation and Finance" for the sum as specified in the advertisement and the proposal. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law, as set forth in "Instructions to Bidders".

When optional types are permitted on contracts with federal funds, bidders must state in the space provided in the proposal the exact designation of the optional type upon which the proposal is predicated.

The right is reserved to reject any or all bids.

B. D. TALLAMY,
Supt. of Public Works

Bids: June 2, 1952

Dredging an Industrial Channel in San Juan Harbor, P. R.

PUERTO RICO TRANSPORTATION AUTHORITY
P. O. BOX 3508
San Juan, P. R.

1. Sealed bids in triplicate will be received in the Office of the General Manager at Building 53, Isla Grande Airport, San Juan, Puerto Rico until 2:00 P. M. (Puerto Rico Time) on the 2nd day of June, 1952, at which time and place all bids will be opened and read aloud, for furnishing all plant, labor, materials and equipment and performing all work for the above described project in strict accordance with the specifications and contract documents.

2. Proposal forms of contract documents, including plans and specifications are at file in the Office of the Chief Engineer of the Puerto Rico Transportation Authority, Building 53, Isla Grande Airport, San Juan, Puerto Rico.

3. Copies of the documents may be obtained until 48 hours prior to assigned time for opening the bids by depositing $25.00 with the Puerto Rico Transportation Authority for each set of documents so obtained. The amount of the deposit will be refunded to each person who returns the plans and documents in good conditions within 20 days after the opening of bids.

The Puerto Rico Transportation Authority reserves the right to reject any and all bids, to waive any informality in bids received, and to accept or reject any or all items of any bid, unless the bidder qualifies such bid by specific limitation.

A certified check or bank draft payable to the Puerto Rico Transportation Authority, U. S. Government Bonds, or a satisfactory bid bond executed by the bidder and acceptable sureties in an amount equal to five per cent (5%) of the bid price shall be submitted with each bid.

SALVADOR V. CARO General Manager

Bids: May 19, 1952

East Side Drainage Project

NOTICE IS HEREBY GIVEN that pursuant to a resolution of the Town Board of the Town of Tonawanda, Erie County, New York, sealed proposals will be received and considered by said Town Board on the 19th day of May, 1952, at 8:00 o'clock P.M., Daylight Saving Time, in the Council Room of the Municipal Building, Kenmore, New York, for furnishing all materials, equipment, and together with all labor for the construction of a section of the East Side Drainage Project, described as Contract "A" and Contract "B" of Division IV, in accordance with the contract documents therefor, including plans, specifications, instructions to bidders, etc., prepared by Nussbaumer and Clark, Consulting Engineers of the Town of Tonawanda, New York, and approved by the Town Board of said Town, all of which are on file with the Town Clerk at his office in the Municipal Building, Kenmore 17, New York, where the same may be examined during the usual business hours.

Copies of the proposed contract documents, plans, specifications, and instructions to bidders, may also be examined at the office of Nussbaumer and Clarke, Consulting Engineers, 327 Franklin Street, Buffalo 2, New York. One copy of said proposed documents may be obtained upon payment of $50.00. Any bidder, upon returning said plans and contract documents in good condition, within twenty (20) days following the taking of bids, will be refunded the full amount of his deposit; non-bidders will similarly be refunded only one-half the deposit.

The Town Board of the Town of Tonawanda, New York, reserves the right to reject any or all bids, or to waive any informalities, or to make an award to other than the low bidders.

Each proposal must be accompanied by a certified check for a sum equal to five per centum (5%) of the estimated expense of the improvement, payable to the order of the Supervisor, or a bond with sufficient sureties, to be approved by the Supervisor, or a penal sum equal to five per centum (5%), of the estimated expense of the improvement, to wit:

Contract "A"	$75,000.00
Contract "B"	$65,000.00
and if lump sum bid on both sections	$135,000.00

conditioned that, if his proposal is accepted, he will enter into a contract for the same, and that he will execute such further security as may be required for the faithful performance of the contract.

No bidder may withdraw his bid within sixty (60) days after the date set for the opening thereof, but may withdraw same at any time prior to the scheduled time for the opening of bids.

ROBERT JOHNSON
Town Clerk
Town of Tonawanda, New York

Dated: April 21, 1952
Published: April 24, 1952

Bids: May 22, 1952

Air Filter Service
Port Authority Bus Terminal

THE PORT OF NEW YORK AUTHORITY
AIR FILTER SERVICE
PORT AUTHORITY BUS TERMINAL
CONTRACT O & M—153
PROPOSAL NO. 779

Sealed proposals for the furnishing of all **labor,** materials and equipment required to **provide** complete air filter service in the **Port** Authority Bus Terminal, 8th Ave. & **40th** St., New York, for a period of one **year,** starting June 1, 1952 to May 31, 1953, will be received at the office of the Director of Purchase of The Port of New York Authority, Room 1402, 111 8th Ave., New York 11, until 11:00 A.M. Thursday, May 22, 1952, at which time and place bids will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase.

THE PORT OF NEW YORK AUTHORITY
Howard S. Cullman, Chairman
New York, May 8, 1952

U. S. Government

Office of the District Engineer, Corps of Engineers, U. S. Army, 1217 U. S. Post Office and Custom House, St. Paul 1, Minnesota—Sealed bids, in duplicate, for furnishing all labor and materials and performing all work required for Reservoir Clearing, Orwell Reservoir, Otter Tail River, Minnesota, will be received in this office until 2:00 P.M., C.S.T., May 22, 1952, and then publicly opened. Further information upon application.

Bids: May 20, 1952

Construction Work, Kentucky

Sealed proposals will be received at the office of the Sanitation District No. 1 of Campbell and Kenton Counties, Kentucky, 37 East Fourth Street, Newport, Kentucky, until 2 P.M., Eastern Standard Time, May 20, 1952, and opened immediately thereafter for furnishing the material and performing the labor for the execution and construction of the following units and sections upon which separate proposals will be received:

- Unit 1, Section B
  - Ohio River Collector—Campbell County
- Unit 1, Section C
  - Licking River, Banklick Creek and Three Mile Creek Collectors
- Unit 1, Section D
  - Ohio River Collector—Kenton County and Willow Run Collector
- Unit 2
  - Second Street and Banklick Lift Stations and Licking River Crossing Nos. 1, 2, and 3
- Unit 3
  - Treatment Plant Complete

in accordance with the plans and specifications prepared by Vogt, Ivers, Seaman and Associates for the Commissioners of the Sanitation District No. 1 of Campbell and Kenton Counties, Kentucky, and on file in the office of the Sanitation District No. 1. Copies of plans for the complete project or for any units or sections together with specifications and proposal forms and any further information desired, may be secured from the office of Vogt, Ivers, Seaman and Associates, Engineers-Architects, 509 Second National Building, Cincinnati, Ohio.

Drawings and specifications will be forwarded, shipping charges COLLECT, upon receipt of written requests. Deposits in the amounts indicated will be required for the plans and specifications:

Complete set	$100.00
Unit 1, Section B	20.00
Unit 1. Section C	30.00
Unit 1. Section D	20.00
Unit 2	20.00
Unit 3	40.00

Refunds for the plans and specifications will be made, returned prepaid, in good usable condition, within 10 days after bids have been opened. Bids are to be sealed and addressed to:

Sanitation District No. 1 of Campbell and Kenton Counties, Kentucky
37 East Fourth Street
Newport, Kentucky

The Commissioners of Sanitation District No. 1 reserve the right to reject any or all proposals, the proposal for any one or more of the units or sections of the work under consideration.

WILLIAM D. ANDERSON, Secretary
Sanitation District No. 1 of Campbell and Kenton Counties, Ky.

Bids: May 21, 1952

Liberty Road Bridge over Snowden Creek

CITY OF BALTIMORE
DEPARTMENT OF PUBLIC WORKS
BUREAU OF WATER SUPPLY

Sealed bids, or proposals, in duplicate, addressed to the Board of Estimates of the Mayor and City Council of Baltimore, and marked "Sealed Bid or Proposal for
Furnishing and Constructing
a Bridge in the
Patapsco Development"
will be received at the office of the Comptroller, Room 204, City Hall, Baltimore 2, Maryland, until but not after May 21, 1952 at eleven (11:00) o'clock A.M. (positively no bids will be received after 11:00 o'clock A.M.) Eastern Daylight Time, and at 12:00 o'clock noon on said date they will be publicly opened and read by the Board of Estimates in Room 231 in said City Hall.

The work to be done under this contract consists, in general, of furnishing all labor and material for and constructing complete a composite wide flange beam bridge and concrete piers and abutments, to be known as the Liberty Road Bridge over Snowden Creek.

The site of the work is located on Liberty Road approximately one-half mile west of Shervettes Corner in Carroll County.

The construction includes, but is not limited to, the following items:

Section A—Substructure	
Excavation	approx. 2,500 cubic yards
Concrete	approx. 2,090 cubic yards
Portland Cement	approx. 3,400 barrels
Reinforcing Steel	approx. 271,000 pounds
Low Alloy Steel	approx. 95,000 pounds
Steel Piles	approx. 2,450 linear feet
Section B—Superstructure	
Concrete	approx. 764 cubic yards
Portland Cement	approx. 1,240 barrels
Reinforcing Steel	approx. 190,000 pounds
Fabricated Structural Steel	aprox. 1,148,000 pounds
Metal Railing	approx. 1,966 linear feet
Bituminous Wearing Surface	approx. 365 tons

Bids are asked for on the Substructure (Section A) and on the Superstructure (Section B) separately and combined.

Any bidder may bid on Section A or Section B or on both sections without bidding on the combined bid, but any bidder who bids on the combined bid shall also submit individual bids on Section A and Section B.

The "Bid Total" of the combined bid need not equal the sum of the "Bid Totals" of Sections A and B.

Bids when filed shall be irrevocable.

Specifications, proposal forms, drawings, and other contract documents may be obtained at the office of the Water Engineer, Room 503 Municipal Office Building, Baltimore 2, Maryland, on and after May 2, 1952. A charge of Ten Dollars ($10.00) will be made for each set of specifications, etc., and this amount will not be refunded.

Each bid or proposal must be accompanied by a certified check of the bidder drawn upon a solvent clearing-house bank, payable to the order of the Mayor and City Council of Baltimore. The amounts of the certified checks shall be as follows:

For a bid on Section A only	$4,000.00
For a bid on Section B only	$6,000.00
For bids on both sections only or For a combined bid	$10,000.00

The Board of Estimates reserves the right to reject any and all bids, and/or to waive technical defects if, in its judgment, the interests of the Mayor and City Council of Baltimore may so require.

Bond in the amount of the contract price will be required of the successful bidder.

Attention of the bidders is called to the minimum wage rates to be paid on this project.

Approved J. S. STROHMEYER
Water Engineer

Bids: May 15, 1952

Soil Explorations SM-35A

STATE DEPARTMENT OF PUBLIC WORKS, ALBANY, N. Y.—Pursuant to the provisions of Highway Law, sealed proposals will be received until 10:30 A.M., Eastern Daylight Saving Time, on May 15, 1952 by Henry A. Cohen, Director, Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany, N. Y. for

SOIL EXPLORATIONS AND FOUNDATION INVESTIGATIONS AT VARIOUS SITES ON THE NEW YORK STATE THRUWAY, HUDSON SECTION, SUBDIVISION 7, SUFFERN TO HARRIMAN, ROCKLAND AND ORANGE COUNTIES TOWNSHIPS OF RAMAPO AND TUXEDO AND VILLAGE OF HARRIMAN, WHICH CONSTITUTES CONTRACT NO. SPEC. SM-35A

Maps, plans and specifications may be examined and obtained at the following offices:

(a) Bureau of Contracts and Accounts, 14th Floor, The Governor Alfred E. Smith State Office Building, Albany 1, N. Y.
(b) J. S. Bixby, District Engineer, Pleasant Valley Road, Poughkeepsie, N. Y.
(c) Charles Schaefer, Department of Public Works, 270 Broadway, New York City.

The deposit for a set of plans, specifications and proposal forms is $5.00. A refund in full will be made to bidders for return of one set in good condition within 30 days of award or rejection of bids; refund for all other sets in good condition, similar period, will be 50% of deposit.

The Engineer's estimate of cost for this work is $37,980.00.

Proposal for this contract must be submitted in a separate sealed envelope with the name of the contract plainly endorsed on the outside of the envelope. Proposal must be accompanied by draft or certified check, payable to the order of the "State of New York, Commissioner of Taxation and Finnance" for the sum of $1,900.00. The retention and disposal of the bidding check, the execution of the contract and bonds shall conform to the provisions of the Highway Law as set forth in "Instruction to Bidders".

The right is reserved to reject any or all bids.

B. D. Tallamy
SUPERINTENDENT OF PUBLIC WORKS

Bids: May 12, 1952

Furnishing and Delivering Fire Hydrants

WASHINGTON SUBURBAN SANITARY COMMISSION
CONTRACT NO. 1114-W

Sealed proposal for furnishing and delivering thirty (30) 4-foot; ninety-four (94) 4½ foot; one-hundred-fifty-five (155) 5-foot; seventy-one (71) 5½-foot; forty-two (42) 6-foot; five (5) 7-foot; three (3) 8-foot fire hydrants will be received in the Office of the Purchasing Agent, Room 3, of the Washington Suburban Sanitary Commission, Hamilton Street, Hyattsville, Maryland until 10:30 A.M., Eastern Daylight Saving Time on Monday, May 12th, 1952 at which time and place they will be publicly opened and read.

Specifications may be obtained from W. R. Douglas, Purchasing Agent of the Commission, Hyattsville, Maryland.

Raymond W. B[illegible]ny, Chairman
L. S. Ray
J. Norman Ager
Commissioners

Attest:
James B. Parkhill
Secretary-Treasurer

Bids: May 19, 1952

Painting Certain Areas in the Port Authority Building

THE PORT OF NEW YORK AUTHORITY
PROPOSAL NO. 777

Sealed proposals for all labor, material and equipment necessary to paint the northeast corner of the 13th floor and the southwest corner of the 15th floor of The Port of New York Authority Building, New York City, will be received at the office of the Director of Purchase of The Port of New York Authority, Room 1402, 111-8th Ave., N. Y. 11, until 11:00 A.M., Monday, May 19, 1952, at which time and place proposals will be publicly opened and read.

Contract documents may be obtained upon request at the office of the Director of Purchase.

THE PORT OF NEW YORK AUTHORITY
HOWARD S. CULLMAN, Chairman

U. S. Government

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3711) will be received at Tracy, California, until May 22, 1952, for furnishing labor and materials for earthwork, concrete pipe line, and structures for lateral 25.6, Contra Costa Canal distribution system, Central Valley Project, California. Location: Near Port Chicago, California. Principal items are: 11,000 cu.yds. excavation; 9,100 ft. of 24, 27, and 30-inch high pressure concrete pipe line; 60 cu.yds. concrete; furnishing and installing metalwork and equipment in pipe line structures; and other work. Completion time 110 days. For particulars, address Bureau of Reclamation, Tracy, California; or Building 53, Denver Federal Center, Denver, Colorado.

GOVERNMENT OF THE DISTRICT of Columbia, Director of Sanitary Engineering, D. C., April 25, 1952. Sealed proposals will be received in Room 509, District Building, 14th and E Streets, nw., Washington 4, D. C., until 2:00 P.M., DAYLIGHT SAVING TIME, MAY 14, 1952, and then publicly opened and read for Chlorination Equipment and Piping, Sewage Treatment Plant, Washington, D. C. Proposal forms, specifications and drawings may be obtained in the office of Chief Clerk, E.D., Room 427 District Building (Telephone National 6000, Extension 2378), upon the deposit of a certified check in the amount of Fifty Dollars ($50.00) for each set, made payable to the Collector of Taxes, D. C.

DEPARTMENT OF THE INTERIOR, Bureau of Reclamation. Sealed bids (Specifications No. DC-3713) will be received at Folsom, California, until June 5, 1952, for furnishing labor and materials for construction of Nimbus Dam, Power Plant, and appurtenant works, Central Valley Project, California. Location: 15 miles northeast of Sacramento, California. Principal items are: Excavation 777,000 cu.yds.; concrete 118,000 cu.yds.; furnishing and installing metalwork, piping and fittings 345,000 lbs.; installing 3,000,000 lbs. gates, hoists, and miscellaneous metalwork; and other work. Completion time 860 days. For particulars, address Bureau of Reclamation, Folsom, California; or Building 53, Denver Federal Center, Denver, Colorado.

OFFICIAL PROPOSALS

Bids: May 27, 1952

Sewage Treatment Plant

CITY OF WILMINGTON, DELAWARE

Sealed proposals for furnishing materials and labor to construct the Sewage Treatment Plant, Contract No. 7 of the City of Wilmington's Sewage Treatment Program, will be received from qualified bidders by the Board of Directors of the Street and Sewer Department, Room 251, City Hall, until 2:30 P.M., Eastern Daylight Saving Time, May 27, 1952, at which time and place they will be publicly opened and read aloud.

The work to be done under this contract embraces the construction of the following: two reinforced concrete grit removal structures, two reinforced concrete primary clarifiers, four reinforced concrete digestors, three reinforced concrete elutriation tanks, a reinforced concrete and masonry control building, cast in place pile foundations for the various structures, earth sludge basins, roads and walks, site improvement and other appurtenant work.

Drawings and specifications may be obtained from the office of the Board of Directors of the Street and Sewer Department of the City of Wilmington, or from the office of Whitman, Requardt and Associates, 1304 St. Paul Street, Baltimore 2, Maryland, upon deposit of Twenty-Five Dollars ($25.00) for each set of drawings and specifications, which deposit will be refunded upon return of the plans and specifications in good condition. The drawings which are furnished prospective bidders for a deposit are one-half (½) scale reproductions of the originals. If a bidder desires a set of drawings which are full scale reproductions of the originals, he may obtain them upon payment of Fifteen Dollars ($15.00) for each set desired which payment will not be refunded.

The Board of Directors of the Street and Sewer Department reserves the right to reject any or all bids and to accept the bid, which in its opinion best serves the interests of the City.

By order of
Board of Directors of the Street and
Sewer Department
Vaughn Clavey, President
Attested
James J. Livingstone, Secretary

Bids: June 3, 1952

Dow Pivot Valves

CONTRACT 434

SEALED BIDS will be received by the Board of Water Supply, at its offices, thirteenth floor, 120 Wall Street, New York City, until 10:00 A.M., Eastern Standard Time, on Tuesday, June 3, 1952, for Contract 434, for furnishing, testing and delivering two 24-inch manually operated bronze Dow pivot valves, and pipe couplings, complete in every respect, for installation in the East Delaware intake chamber of the Delaware aqueduct, all as set forth in the specifications.

No bid will be received and deposited unless accompanied by a certified check upon a National or State bank, drawn and made payable to the order of the Comptroller of the City of New York, in the amount of one thousand five hundred dollars ($1,500.00), for the proper execution of the contract.

At the above place and time the bids will be publicly opened and read. Pamphlets containing information for bidders, forms of bid and contract, specifications, requirements as to surety, etc., can be obtained in Room 1311, at the above address, upon application in person or by mail, by depositing the sum of five dollars ($5.00) in cash or its equivalent for each pamphlet. Within 30 days following the award of contract or rejection of bids, the full amount of such deposit will be refunded for each pamphlet submitted as a bid and a refund of four dollars ($4.00) will be made for each other pamphlet returned in acceptable condition. For further particulars, apply at the office of the Chief Engineer at the above address.

IRVING V. A. HUIE, President, RUFUS E. McGAHEN, EDWARD C. MAGUIRE, Commissioners, Board of Water Supply; RICHARD E. BURKE, Secretary.

OFFICIAL PROPOSAL

RATE: $1.50 per line (or fraction) per insertion.
CLOSING DATE: 10:30 A.M. Friday for issue out following Thursday.
SEND COPY: Official Proposal Division, Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

BUSINESS AND FINANCE

Wage rises boost costs

The spring rise in Engineering News-Record Cost Indexes due to new labor wage agreements is proceeding slowly.

For May, the Construction Cost Index is up to 557.11, based on 1913 equals 100. This is a rise of 3 points, or 9.5% since April and 2.6% since May of last year.

The ENR Building Cost Index is 410.36 for May, up 2.4 points, or 9.6% from April, and 2.3% since last May.

Materials prices continue steady with the new freight rates chiefly responsible for such changes as are shown. The new freight rates are not yet fully reflected in prices reported to date.

Cement is 0.2% higher this month on the 20-cities average and 1% above prices a year ago.

Lumber prices for 2x4s are 0.9% higher than those for last month, but 2.2% below where they were in 1951.

Steel prices, of course, are still in the thick of the battle, and continue at the old rate.

A rise of 9.6% for the month in common labor wages and of 0.7% for skilled labor are mainly responsible for the cost index rises.

Since May, 1951, common wages have gone up 5.1% and skilled wages have advanced 6.4%. These increases in the 20-cities wage averages would be higher this month except that several agreements awaiting Wage Stabilization Board approval are not included.

Costs up in 9 cities

Engineering News-Record's cost indexes show higher costs in May for 9 of the 21 cities covered. In eight of the cities, lumber prices were higher, and in two cities, cement prices were up.

On the labor side, four cities showed increases in skilled labor rates, and two of these four cities also had higher common labor rates.

Here are some of the major rises:

In Cleveland, lumber prices and skilled and common labor wage rates were up. Pine 2x4s went up from $83 to $90 per M ftbm, the second consecutive increase. Common labor rates in Cleveland went up 7 cents an hour, from $2.28 to $2.35. In the skilled labor class, carpenters' wages were up 14 cents per hour to $2.97, while wage rates for structural ironworkers rose 3 cents to $2.93 an hour.

(*Continued on next page*)

BUILDING COST IN 21 CITIES

1913 = 100

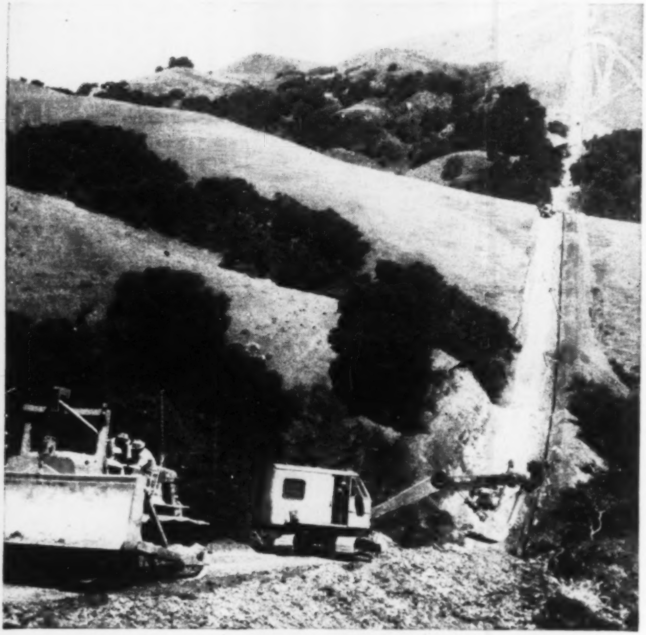
	ENR cost indexes		
	1952		1951
City	May	Apr	May
Altanta	395	395	397
Baltimore	509	508	492
Birmingham	417	417	416
Boston	611	587	590
Chicago	626	626	603
Cincinnati	549	549	559
Cleveland	685	668	607
Dallas	437	437	437
Denver	571	571	558
Detroit	622	621	602
Kansas City	588	586	575
Los Angeles	567	565	574
Minneapolis	593	593	587
Montreal	500	500	456
New Orleans	435	435	439
New York	618	612	619
Philadelphia	601	601	575
Pittsburgh	557	557	531
St. Louis	605	605	585
San Francisco	535	532	523
Seattle	620	620	585
Seattle	620	620	586

BUILDING COST IN 21 CITIES

1913 = 100

	ENR cost indexes		
	1952		1951
City	May	Apr	May
Atlanta	351	351	341
Baltimore	409	407	402
Birmingham	355	355	351
Boston	419	409	411
Chicago	415	415	401
Cincinnati	402	402	401
Cleveland	419	410	402
Dallas	371	371	362
Denver	431	431	432
Detroit	423	419[R]	411
Kansas City	434	431	411
Los Angeles	401	399	398
Minneapolis	438	438	408
Montreal	383	383	373
New Orleans	379	379	377
New York	465	460	466
Philadelphia	462	462	449
Pittsburgh	416	416	400
St. Louis	441	431	437
San Francisco	386	383	380
Seattle	389	389	384
Seattle	389	389	384

Accountants must know construction



. . . because cost control starts here

Business forms and office machines figure as heavily in a contractor's success as do construction tools in these days of sharp-pencil bidding and far-flung operations in the field of construction.

That's the opinion of two Bechtel Corp. officials—H. C. Tyler, chief accountant, and E. C. Lepori, field office administrator.

"And don't underrate the importance of construction know-how among the accountants," Mr. Tyler admonishes.

"In our San Francisco accounting office five of us have job experience. Actually, it's the on-the-job accounting office that is the key to effective central-office records and good cost-knowledge. Since every job is different, to attempt to centralize accounting would be almost impossible."

- **Machines and forms**—The Bechtel Corp., with 30 jobs going from Buffalo to Honolulu, has 275 adding machines, as well as numerous calculating and bookkeeping machines. In addition, Bechtel uses 25 different business forms for reporting to the central office. About half of these forms are standard business forms, published by a business-machine company. The others, are special forms devised by Bechtel to suit the needs of construction cost reporting.

The principal job report to the central office is a monthly financial statement. These 30-odd reports are tabulated and coordinated with a consolidated report of the entire company's activities.

- **Field work aids accountants**—Central-office records also keep tab on every piece of heavy-construction equipment. These records are kept up to date with the aid of monthly reports from the jobs.

And it is here that job experience on the part of central-office men comes in handiest. For these men must be able to assign realistic depreciation and condition money-figures to each item. Familiarity with the equipment is essential to accurate cost-keeping.

In addition to financial and equipment reports each job prepares a budget report with detailed cost breakdowns. This reporting is the very life blood of a contracting firm, for it tells the engineer and estimators what the actual cost is on each construction item that was cost-estimated in making up the original bid.

These job reports quickly and accurately show what items on the job are slipping out of line with the original estimate. Even though every job varies, the "unexpected" has a habit of turning up with great frequency and good cost control records chart a pattern of problems that serves to alert the contractor.

Upon the shoulders of the accountants falls much of the responsibility for spotting unit prices that are too high. The more he knows about construction the more valuable is his analysis. Obviously, the reports from the job must be clear, accurate, well-organized and systematic.

Other regular job-to-headquarters reports include payroll and expendable-equipment accounts. The job processes all purchase orders (central office okays purchases of non-expendable items) and does much of the actual field buying.

April contracts climb 13%

- **Streets and roads shoot 48% ahead of March**
- **Industrial building awards pick up new gains**
- **Mass housing continues to set fast pace**
- **States west of the Mississippi lead other regions**

Construction business was good in April. Contract awards for heavy construction, as reported by ENGINEERING NEWS-RECORD, amounted to $1,180 million, the highest monthly total since the $1,197 reported for January, and 13% higher than the $1,043 million reported in March.

Industrial building climbed to $269 million in April, to lead all other types of construction. The total for the first four months is $968 million. Although it is still trailing the comparable record-setting period in 1951, industrial building is starting to gain. Contracts for April were 33% above the $202 million for March, and only 13% below the $309 million registered in April, 1951.

Highway awards up 48%

Contract awards for streets and roads jumped to $149 million in April, 48% above March. The April figure pushed the cumulative total to $416 million, 32% above last year.

Public and private mass housing continued to set a fast pace in April. Private housing contracts totaled $226 million, bringing the cumulative four-month total up to $916 million, 41% above a year ago.

Public housing projects totaled $92 million in April, far below the year's high of $133 million in March. To date this year public housing is 79% ahead of 1951 .

Regional awards analyzed

States west of the Mississippi, not including the Far West, again led all other regions in contract awards with a total of $321 million in April.

This region led in industrial building, street and road construction, public buildings other than housing, and private unclassified construction.

The Mid-Atlantic States had $239 million in contracts, a sharp increase over previous months when contracts ranged from $188 million in January to $173 million in March.

The increase was due largely to public housing contracts for $41 million, 45% of the U. S. total. The region also led in private mass housing with $86 million in awards, 38% of the nation's total.

The South was nearly on a par with the Mid-Atlantic region, accounting for $238 million in contract awards.

Industrial building, private housing, and street and road construction boosted the South's total.

Out of a total of $141 million reported in the Midwest—contract awards for industrial building and streets and roads construction accounted for $33 million and $27 millon, respectively.

Construction in the Far West moved upward for the fourth consecutive month, to reach $162 million in April, almost twice as much as January's $86 million. Major factor in contract awards in the Far West was $61 million for earthwork and waterways.

New England's $79 million in contract awards for April was nearly twice the March volume and made April the highest month in 1952 for that region.

Private developers take over slum areas

Housing developments—largely under the auspices of private builders—are the biggest factor in redevelopment of blighted and slum areas in U. S. cities, the Housing and Home Finance Agency has reported.

In a survey of 32 cities and towns, HHFA said it found 54 areas being redeveloped to conform with community master plans. Forty-seven of the areas are predominantly being turned to new housing—and of the 47, 37 are to be handled privately.

(*Department continued on next page*)

ENGINEERING CONSTRUCTION CONTRACTS—APRIL, 1952

ENGINEERING NEWS-RECORD *reports continental U. S. Construction projects of the following minimum costs—Waterworks, excavation, drainage and irrigation,* $34,000; *other public works,* $60,000; *industrial buildings,* $82,000; *other buildings,* $300,000
Four Weeks—Thousands of Dollars (000 Omitted)

	April, 1952							U. S. Cumulative Four Months		%	Canada
	New England	**Middle Atlantic**	**South**	**Mid-West**	**West of Mississippi**	**Far West**	**Total U. S.**	**1952**	**1951**	**Change '51 to '52**	**April 1952**
Public Works											
Waterworks	514	700	4,178	1,785	3,054	5,859	**16,090**	**81,453**	79,610	+ 2	3,505
Sewerage	2,567	8,804	4,397	3,096	2,316	1,878	**23,058**	**73,015**	105,267	−31	2,466
Bridges	3,578	10,894	6,085	4,802	8,378	3,104	**36,841**	**104,416**	86,948	+20	402
Earthworth and waterways	158	1,422	6,532	876	12,146	60,656	**81,790**	**180,910**	205,663	−12	14,256
Streets and roads	13,724	29,740	31,495	27,141	34,270	12,296	**148,666**	**415,590**	314,006	+32	1,118
Public buildings, residential	12,233	40,599	13,083	7,032	5,617	12,988	**91,552**	**327,887**	183,571	+79	6,720
Other public buildings	14,257	22,536	16,445	19,106	51,770	26,392	**150,506**	**537,372**	800,955	−33	8,055
Unclassified	6,695	4,489	13,087	3,405	7,211	11,041	**45,928**	**214,935**	163,746	+31	13,325
Total public	**53,726**	**119,184**	**95,302**	**67,243**	**124,762**	**134,214**	**594,431**	**1,935,578**	**1,939,766**	**−0.2**	**49,847**
Federal government (included in above classifications)	9,700	13,907	18,753	4,660	55,715	84,405	**187,140**	**621,992**	763,263	−19	24,902
Private											
Bridges	....	....	....	....	....	....	....	**9,840**	3,438	+186	....
Industrial buildings	2,265	25,759	68,180	32,702	137,341	3,215	**269,462**	**967,522**	1,809,194	−47	5,952
Com'l. buildings, residential	9,359	86,166	60,127	19,150	33,059	18,478	**226,339**	**916,413**	648,180	+41	11,009
Other commercial buildings	855	8,050	6,189	18,276	6,431	5,691	**45,492**	**166,947**	218,883	−24	2,634
Unclassified	12,700	....	7,749	3,905	19,620	642	**44,616**	**212,118**	368,386	−42	5,660
Total private	**25,179**	**119,975**	**142,245**	**74,033**	**196,451**	**28,026**	**585,909**	**2,272,840**	**3,048,081**	**−25**	**25,255**
Total Engineering Construction:											
April, 1952—4 weeks	**78,905**	**239,159**	**237,547**	**141,276**	**321,213**	**162,240**	**1,180,340**	....	....	....	**75,102**
March, 1952—4 weeks	39,891	173,257	209,558	142,975	330,302	146,868	**1,042,851**	....	....	....	57,309
April, 1951—4 weeks	47,083	145,256	159,039	180,364	288,330	223,362	**1,043,434**	....	....	....	64,198
Four Months—1952	**175,847**	**779,227**	**971,938**	**599,439**	**1,177,680**	**504,287**	....	**4,208,418**	....	**−16**	**341,120**
Four Months—1951	140,604	906,699	1,061,041	891,609	1,337,110	650,784	....	....	**4,987,847**	....	**309,037**
% Change '51 to '52	+25	−14	−8	−33	−12	−23	....	....	....	....	+10

STUDYING CONTRACTORS' RECOMMENDATIONS for renegotiation of contracts are members of the Renegotiation Board in Washington. Left to right, are Frank L. Roberts, John H. Joss, John T. Koehler, chairman; and Lawrence E. Hartung.

Contractors seek changes in renegotiation rules

By Bill Kearns
Washington Staff

Renegotiation of government contracts remains a continuing problem for construction men.

Although the regulations previously published (ENR Apr. 3, p. 31) are firm, a number of recommendations by various industries are still under consideration.

In particular, some suggestions made by the Associated General Contractors may come out in the form of instructions or amended regulations.

How they compare

This is how recommendations made by AGC compare with the regulations as published:

- **Section 106 (A) (6)**—Mandatory Exemptions—provides that the act will not apply to "any contract which the board determines does not have a direct and immediate connection with the national defense effort."

AGC recommended that the Renegotiation Board exempt, by classes, those contracts for work carried on regularly by government departments not immediately connected with national defense.

Further, that the board determine in advance whether a particular contract would be subject to renegotiation even if it were in an area of work that would not normally be subject to renegotiation.

The recommendation to exempt classes of contracts not directly connected with national defense was adopted in the regulations.

Paragraph 1453.B covers this. It exempts contracts for normal maintenance and repair of government buildings except for renovation of standby facilities or structures acquired after June 30, 1950, or for substantial alteration or enlargement of existing facilities.

These items are out

Also taken out of the act were:

- Construction contracts entered into before July, 1950 except those with the Defense Department and its branches, the Coast Guard and the Atomic Energy Commission.
- Construction contracts for housing with the Panama Canal Co. and the Canal Zone government entered into before July 1, 1950.
- All contracts entered into with the Housing and Home Finance Agency except construction contracts signed after June 30, 1950.
- All Corps of Engineers contracts paid out of civil functions appropriations, except construction contracts for hydroelectric power entered into after June 30, 1950.
- Bonneville and TVA contracts that were signed before July 1, 1950.

- **Exempt disaster work**—Provisions were made in the regulations for exempting disaster type work. In case of a natural disaster like the Midwestern floods, procurement officers can request that the board exempt certain contracts.

These would be mainly for relief supplies, emergency repairs, or other related work. Normally these requests would have to go through government channels. But if an immediate answer is needed, the procurement officers can telegraph the Renegotiation Board.

All the above exemptions also apply to subcontracts under primes which come within the exemptions.

The regnegotiation act also authorized the board, in its discretion, to exempt "any contract or subcontract to be performed outside of the territorial limits of the continental United States or in Alaska."

No excessive profits

AGC felt that most construction contracts overseas were cost-plus-fixed-fee types and therefore a contractor would have no area for excessive profits which the government would recapture.

Because of this, AGC recommended broad exemption of overseas work.

The Renegotiation Board took a contrary view. It exempted contracts with foreign governments. Actually, the Renegotiation Board was in position to do little else.

The reason was that Congress was

in favor of renegotiating overseas construction contracts following Congressional inquiry into the Atlas and Bluejay Projects.

• **Another section** of the act allowed the board to exempt at its discretion any contract for a specified time if the provisions of the contract were adequate to insure that no excessive profits would accrue.

AGC felt that the board could safely exempt construction contracts that were awarded as the result of advertised competitive bidding, under this provision.

AGC pointed out that the large number of contractors bidding on projects at present couldn't help but make positive that the margin of profit would be small.

• **Too big a bite?**—The Renegotiation Board's reaction to this recommendation was that this would be too big a bite of contracting to exempt at once.

Actually, experts on the Renegotiation Board staff are studying this problem and will probably recommend exemptions of particular areas of contracting. But this is still in the future.

World War II system cited

Renegotiation procedure during World War II allowed the contractor the option of deciding the basis on which his work was to be renegotiated. The AGC requested that the same procedure be followed again.

The AGC's idea was that the contractor should have the option of lumping together all of his renegotiable contracts, or being renegotiated on a completed contract, or to be permitted to carry forward or backward his losses.

Actually the option idea was permitted by the board. Part 1459.1 (B) (2) covering costs points out that contractors may use different accounting methods other than those used for Federal Income Tax if a number of listed conditions are met.

Joint venture studied

The last recommendation that the general contractors made was that the board adopt a policy of giving consideration to other business men subject to renegotiation of partners in a joint venture, when the joint venture is renegotiated. AGC feels that if a contractor takes a loss on one renegotiated contract, then he should be allowed to offset the loss with any profit he might make under the joint

(Continued on page 121)

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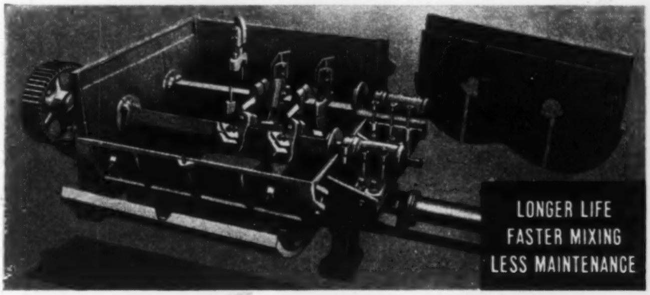

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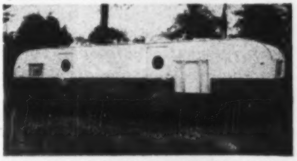

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Q. Why is iron and steel *scrap* a matter of importance to me?

A. Steel for our country's military program and civilian economy is being produced at the annual rate of 107,000,000 tons in 1951 . . . 119,500,000 tons expected in 1952. Steel-making capacity is being increased now to meet those quotas.

What Do I Get For My Scrap?

In addition to being paid for your scrap, you remove nuisance inventory from your plant—saving valuable floor space. Also, you have a better chance of *getting* new steel or steel products. But, *most important*—you help alleviate a dangerous condition threatening our country's capacity to rearm and satisfy civilian requirements at the same time.

Q. How does scrap figure in the production of steel?

A. Steel is composed, generally speaking, 50% of pig iron, 25% of "production" scrap (that is, the scrap which is produced as a by-product of steel-making) and 25% of "purchased" scrap.

Q. Is scrap getting scarce?

A. Yes. The supply of *purchased* scrap is not increasing fast enough to meet the needs of increasing steel production.

Q. What if the needed scrap isn't obtained?

A. Open-hearth furnaces will not be able to operate at capacity. That will mean a loss of steel production . . . and fewer products made of steel.

Q. Why not use pig iron instead of scrap?

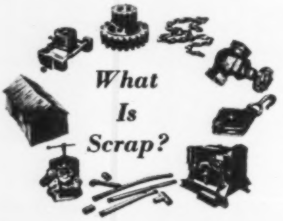
A. Every ton of scrap conserves approximately 2 tons of iron ore, 1 ton of coal, nearly ½ ton of limestone and many other vital natural resources—to say nothing of the extra transportation facilities that would be otherwise required.

Q. How can *more* scrap be furnished?

A. By everybody pitching in—as we always do in every emergency—and searching out all possible sources of scrap.

Q. What are these sources?

A. Metal-fabricating plants normally turn over to scrap dealers the scrap left from machining. But there's not enough of this to fill our present enormous need. So everybody—both in and out of the metal-fabricating industries—must sell scrap in the form of *idle metal.*


What Is Scrap?

Every pound of idle metal is needed to keep our steel mills operating at top capacity. Sell your idle metal to a local scrap dealer right away.

What Do I Do *First*?

Write for free booklet. It tells how to set up a Scrap Salvage Program in your plant. Thousands of plants are cooperating. Do *your* part now! Address Advertising Council, 25 West 45th Street, New York 19, N. Y.

Q. *We* don't *produce* scrap—how can *we* help?

A. Scrap is any kind of iron and steel that's gathering dust—obsolete machines or structures, jigs and fixtures, pulleys and wheels, chains and track, valves and pipe—*anything* with rust on it or dust on it. Non-ferrous scrap is needed, too.

Q. What do we do with it when we find it?

A. Use your normal channels or get in touch with a recognized scrap dealer.

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MORE STEEL TOMORROW

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venture renegotiating proceedings.

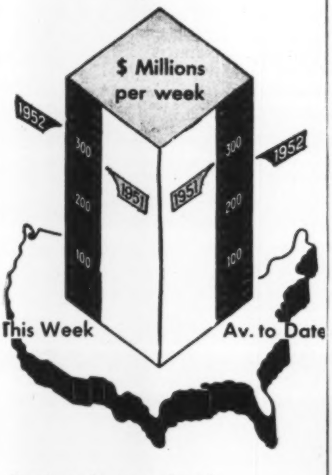
The answer to this wasn't spelled out in the regulations. Actually the law provides for this by indirection. A contractor's entire renegotiable business during his fiscal year is taken as a whole under renegotiation.

However, because of the complexities involved in joint ventures by construction contractors, renegotiation experts are now trying to come up with an answer to AGC.

By and large, AGC feels that the Renegotiation Board is going along with industry on a fair and cooperative manner.

Activity This Week

As reported to ENR
(in millions of dollars)



Contracts by type of work

	This Week	Cumulative 19 wks 1952	Cumulative 19 wks 1951	Cumulative 19 wks % chge
Waterworks .	$5.4	$88.8	$87.3	+2
Sewerage . . .	4.6	80.2	121.3	−34
Bridges	10.1	134.1	110.8	+21
Highways . .	44.1	491.0	373.4	+31
Earthwork, waterways .	1.9	221.3	210.9	+5
Buildings:				
Public	42.9	605.5	876.3	−31
Housg., pub.	30.7	368.7	203.8	+81
Housg., priv.	76.6	1,079.1	785.4	+37
Commercial	14.3	203.4	247.1	+18
Industrial . .	47.2	1,055.4	1,956.9	−46
Unclassified.	37.3	484.2	580.0	−17
Total	**$315.1**	**$4,811.7**	**$5,553.2**	**−13**

NOTE: Minimum size projects included are: Waterworks and waterway projects, $34,000; other public works, $60,000; industrial buildings, $82,000; other buildings, $300,000.

ENR COST INDEX

Index Base = 100	1913	1926	1949
Constr. cost . May '52	557.11	267.80	116.79
Bldg. cost . . May '52	410.36	221.83	116.65
Volume . . . . Apr. '52	**568**	**231**	**164**

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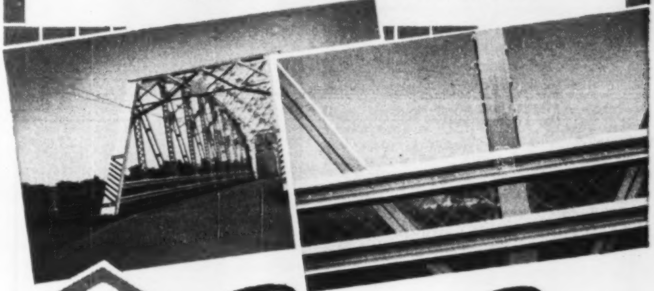

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Bids Asked—Low Bidders—Contracts Awarded—First Section

Compiled by Business News Department—Engineering News-Record, 330 W. 42nd St., New York 36, N. Y.

ELSIE EAVES, Manager *J. A. MAHONEY, Reports* *M. R. ROESSLER, Statistics*

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES
May 15, 20 Vermont

STREETS AND ROADS
May 13, Massachusetts

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Granger Contg. Co., Inc.**, 306 Main St., Worcester, Mass. CA **$6,000,000.** SHOPPING CENTER, incl. 53 stores, 2 supermarkets, 2 banks, 1 story, 150x800 ft., brick, masonry branch post office, parking areas, Lincoln Plaza, WORCESTER, MASS. Ray D. Moore Assoc., 50 Franklin St., Worcester, Mass. Albert J. Roy, 120 Front St., Worcester, Mass., archt. CD 2/12/51.

▲ **E. & F. Constr. Co.**, 84 Wells St., Bridgeport, Conn., CA **$1,000,000,** COMMUNITY CENTER, Chapel St. between Park and York Sts., NEW HAVEN, CONN. Jewish Center of New Haven, 7 Dwight St., New Haven, Conn. Bids Feb. 4. CD 4/28, under LB.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES
May 15, New York

STREETS AND ROADS
May 13, Maryland May 15, New York
May 16, Pennsylvania

▲ **New York**—B.A. 5/15—At office Bertram D. Tallamy, supt. Dpt. P. Wks., The Governor Alfred E. Smith State Office Bldg., Albany, approx. 1,600 ft. stone jetty for beach protection and stabilization along the barrier beach at Shinnecock Inlet, Suffolk Co., $819,000; approx. 700 ft. stone jetty to prevent migration of east shore of Moriches Inlet and build up and widen the barrier beach east of the Inlet, Suffolk Co., $315,675; placement of hydraulic fill and misc. work to stabilize Pikes Beach at Moriches Inlet, Suffolk Co., $190,000.

▲† **Del., Dover**—WAREHOUSE, etc.—B.A. 7/2—U. S. Eng., 121 N. Broad St., Phila., Pa., Air Force Terminal, Base Supply Warehouse A-10 Warehouse, Depot Maintenance Shop at Dover Air Force Base. $2,000,000. CD 9/13.

BIDS ASKED—BUILDINGS

▲ **Del., Wilmington**—HOUSING—B.A. 5/6—Wilmington Housing Auth., 3403 Thatcher St., Southbridge Housing Development, $2,000,000. George E. Pope & Albert Kruse, Elks Bldg., archts. CD 9/12.

SOON LETS CONTRACT—BUILDINGS

N. Y., Brooklyn—SCHOOL—Roman Catholic Church of St. Anselm, 356 82 St., Zone 9, soon lets contract parish school, 8202-8212 Fourth Ave. $800,000. Henry V. Murphy, 1 Hanson Pl., Zone 17, archt. CD 2/13.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **NEW YORK**—Bureau Contracts & Accounts, The Governor Alfred E. Smith State Office Bldg., Albany,
D. W. Winkelman Co., Inc., Heffernan Bldg., Syracuse, N. Y. LB. **$4,392,669,** grading, paving, with twin 25-ft. concrete arteries 6.4 mi. Ontario Sect. of the New York State Thruway from Warners, easterly, to the existing Thruway pavement east of Rte. 370, Onondaga Co.;
John Arborio, Inc., West Cedar St., Poughkeepsie, N. Y., LB. **$1,526,339,** reconstruct 7.83 mi. Rte. 22, Columbia and Dutchess Counties;
Bero Eng. & Constr. Corp., McKinley Bldg., Buffalo, N. Y., LB. **$1,962,101,** paving, with twin 25-ft. concrete arteries 7.25 mi. of the Thruway, construct 3 highway grade separation structures, misc. work 9.12 mi. Onondaga Co. Bids Apr. 30. CD 4/8.

▲ **Booth & Flynn Co.**, 1942 Forbes St., Pittsburgh 19, Pa., LB. **$1,608,570.** Contr. 417, construct outlet works, etc., on East Delaware Tunnel of the Delaware Aqueduct, in town of Neversink, NEW YORK, N. Y. Bd. Water Supply, 120 Wall St., New York, N. Y. Bids Apr. 29. CD 4/3.

▲ **MARYLAND**—State Rds. Comn., 108 E. Lexington St., Baltimore, Zone 2,
Nello L. Teer, Durham, N. C. CA **$1,228,967.** grading, drainage surf. 1 lane of dual hy. 2.33 mi. Contr. B 578-8-415, Baltimore Co. Bids Feb. 19, awarded Apr. 25. CD 2/27, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Fenimore Terrace, Inc.**, c/o Alwin Cassens, Jr., archt., 145 S. Franklin Ave., Valley Stream, N. Y. Owner Builds. **$3,300,000.** 230 HOUSES on 45-acre tract, on Grand Ave. to be called Baldwin Oaks, BALDWIN, N. Y.

▲ **Hilltop Village**, c/o Samuel Paul, archt., 163-18 Jamaica Ave., Jamaica, N. Y. Owner Builds. Approx. **$8,800,000.** co-operative APARTMENT, for 880 families, Francis Lewis Blvd. and Project St., HOLLIS, N. Y.

Westmoreland Ranch Homes, c/o John Burton, archt., 163-18 Jamaica Ave., Jamaica, N. Y. Owner Builds. **$650,000.** 35 HOUSES on tract on Westmoreland St., east of Little Neck Parkway, LITTLE NECK, N. Y.

▲ **Woodbridge Oaks North** c/o S. J. Glaberson, archt., 200 E. 37 St., New York, 16, N. Y., Owner Builds, **$4,000,000** 400 HOUSES, Garden State Parkway and Oak Tree Rd., ISELIN, N. J.

George H. Evans & Co., 1914 Spring Garden St., Phila., Pa., LB **$669,714,** Oxford Valley elementary SCHOOL, Fairless Hills, FALLSINGTON, PA. Falls Twp. School Bd., Fallsington, Pa. Bids Apr. 23. CD 3/27.

▲ **McCloskey & Co.**, 1620 W. Thompson St., Phila., Pa., LB **$2,059,000.** Junior HIGH SCHOOL, necessary paving, Algon St., Robbins Ave., etc., PHILA. PA. Bd. Educ., 21 and Winter Sts., Phila., Pa. Bids Apr. 25. CD 4/9.

▲ **Harry M Shendero**, 2001 Sheimire Ave., Phila., Pa., Separate Contracts. **$1.500,000.** RESIDENTIAL DEVELOPMENT, Rumfort Rd. and Stenton Ave. PHILA., PA. Henry S. Berg, 1411 Walnut St., Phila., Pa., archt.

▲† **Five Boro Constr. Corp.**, 2 Lafayette St., New York, N. Y. CA **$1,692,000,** est. $1,600,000. 2 story, part bsmnt., 52x260 ft., 72x260 ft. wing, 1 story, 100x52 ft. wing, rein.-con., steel, brick interior ballistics LABORATORY, Eng. 18-020-52-37, ABERDEEN PROVING GROUND, MD. U. S. Eng., 24 and Maryland Ave., Baltimore 18, Md. CD 4/17 under LB.

▲† **Baltimore Contractors, Inc.**, 711 S. Central Ave., Baltimore, Md. LB **$1,109,450,** six 60x202 ft., concrete steel, concrete block, automotive school SHOPS, Eng. 18-020-52-40, ABERDEEN PROVING GROUND, MD. U. S. Eng., 24 St. and Maryland Ave., Baltimore 18, Md. Bids Apr. 25. CD 4/17.

▲ **Phillip Vizzini & Son, Inc.**, 504 Stamford Rd., Baltimore, Md. LB **$2,034,942,** est. $1,600,000. 1, 2 and 3 story, 370x385 ft. Cherry Hill Colored Junior High SCHOOL, BALTIMORE, MD. City, Bureau Bldg. Constr., 410 Municipal Bldg., Baltimore 2, Md., Bids Apr. 16. CD 4/1.

▲† **George A. Fuller Co.**, Munsey Bldg., D. C. CA **$6,993,862.** MILITARY PROJECT (restricted) Eng. 49-080-52-79, FORT RITCHIE, MD. U. S. Eng., First and Douglas Sts., N. W., Wash., D. C. Bids Apr. 29. Awarded May 1. CD 4/9.

SOUTH

BIDS ASKED—BUILDINGS

▲ **Tenn., Memphis**—WAREHOUSE, etc.—B.A. 6/1—Orgill Bros., 36 W. Calhoun Ave., waerhouse and offices, sales rooms, etc. $2,000,000. Walk C. Jones-Walk C. Jones, Jr., 1215 Poplar Ave., archts. CD 2/25.

▲ **Miss., Jackson**—MEDICAL SCHOOL—B.A. After 6/20—State Bldg. Comn., New Capitol Bldg., medical school and teaching bldg. $8,500,000. E. L. Malvaney, R. W. Naef, & N. W. Overstreet, 201 N. Lamar St., archts. CD 4/23.

SOON LETS CONTRACT—BUILDINGS

▲ **Ga., Marietta**—RADAR, etc.—Lockheed Aircraft Corp., Marietta, soon lets contract, radar and electronics bldg., and flight operations bldg. Approx. $2,000,000.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Sumter Builders, Inc.**, Sumter, S. C., CA, **$458,216,** sub-station at Aiken;
Service Electric Co., 608 Holtzclaw Ave., Chattanooga, Tenn., CA, **$354,139,** sub-station at Orangeburg;
Roy Richards, Carrollton, Ga., CA, **$428,415,** sub-station at St. George, SOUTH CAROLINA. Central Electric Power Co-operative, c/o Southern Eng. Co., engrs., 1000 Crescent Ave. N. E., Atlanta, Ga., Grand total **$1,240,770.** Bids Apr. 22. CD 4/15.

▲† **Greenhut Constr. Co.**, 23 South "A" St., Pensacola, Fla., CA, **$1,413,779,** airmen's quarters and mess, administration bldgs. at Auxiliary Field 9, Inv. 52-32, EGLIN AIR FORCE BASE, FLA. U. S. Eng., P. O. Box 1160, Mobile, 7, Ala. Bids Mar. 27. CD 4/23, under LB.

LOUISIANA—State Hy. Dpt., Highway Office Bldg., Baton Rouge,
Texas Bitulithic Co., Burma Rd., New Orleans, La. LB **$273,967,** patching, wid'n. c. conc. 1.314 mi. Dixie Inn-Minden Hy., State Rte 4, S. P. 1-04-12, F. A. Proj. F 116 (6) and U-116 (5), Webster Parish;
Barber Brothers Co., 2636 Dougherty Dr., Baton Rouge, La. LB **$547,995,** patching, wid'n. c. conc., bridges 11,418 mi. Denham Springs-Livingston Hy., State Rte. 7, S. P. 13-06-14, F. A. Proj. F 79 (6), Livingston Parish. Bids Apr. 23. CD 4/4 and 4/11.

LOUISIANA—State Hy. Dpt., Highway Office Bldg., Baton Rouge,
W. R. Aldrich & Co., Box 1751, Baton Rouge, La., LB, **$707,165,** concrete slab span bridges wid'n. existing c. conc. 13.343 mi. Hammond-Amite Hy., State Rte. 33, S. P. 17-04-06 and 17-05-09, Tangipahoa Parish. Bids Apr. 23. CD 4/11.

▲ **TENNESSEE**—State Hy. Dpt., Nashville,
R. E. Martin, 317 5th Ave. S., Nashville, Tenn., CA **$779,003,** crushed stone surf., construct overhead over Southern Ry. on a relocation of State Rte. 2 at Ooltawah, 3.156 mi. Proj. FI 002-3-(18), Hamilton Co.;
Bowyer & Johnson, Jackson, Tenn., CA. **$819,512,** concrete and bit. materials paving, construct storm sewers, curbs, sidewalks, and exten. box-type bridge 3.323 mi. sect. of State Rte. 1 (Summer Ave.) from Highland Ave. in Memphis and extending to White Station R. 0.686 mi. beyond east city limits of Memphis towards Brownsville Proj. No. UFI-001-(35), Shelby Co. Bids Mar. 21. CD 3/26, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **J. D. Hedin Constr. Co.**, 2900 Newton St., N. E. Wash., D. C., CA **$2,280,000.** Wakefield Junior-Senior HIGH SCHOOL, ARLINGTON, VA. Bd. Educ., 1426 N. Quincy St., Arlington, Va. Rhees Burket, 1223 Connecticut Ave., N. W., Wash. D. C. Bids Apr. 24.

J. Kennon Perrin, 6000 W. Broad St., Richmond, Va., CA **$972,000.** Defense HOUSING Proj. VA1D1 and VA2D1, CAMP PICKETT, VA. Housing & Home Finance Agency, 900 N. Lombardy St., Richmond, Va. Bids Apr. 16. CD 5/1, under LB.

▲ **C. M. Guest & Sons**, P. O. Box 829, Anderson, S. C., CA, **$1,250,000,** MILL addns., GRIFFIN, GA. Dundee Mills, Inc., Griffin, Ga. CD 3/28.

▲ **D. L. Phillips**, 308 W. Palmer St., Charlotte, N. C., LB, **$4,465,500,** construct, manage and finance 500 HOUSING units for personnel of Hunter Air Force Base, SAVANNAH, GA. U. S. Eng., Post Office Bldg., Atlanta, Ga. Bids Apr. 23. CD 3/20.

† **Bell & Williams**, 201 Clayton St., Montgomery, Ala. CA, **$863,311,** temporary HOUSING, CAMP RUCKER,

(Continued on page 124)

PROJECTS COVERED

Projects—By Size

Construction projects here reported cover the United States and Canada, are of these minimum sizes or larger: water supply, earthwork, waterways $34,000; other public works $60,000; industrial buildings $82,000; other buildings $300,000.

Classes of Construction

(Name in order of Listing)

Water Supply
Sewers, Waste Disposal
Bridges
Streets & Roads
Earthwork, Waterways
Latin America
Public Buildings
Commercial Buildings
Industrial Buildings
Unclassified

Stages Reported

PROPOSED WORK: Including appointment of engineers or architects.

BIDS ASKED (new announcements only). For full calendar, see also preceding issues of ENR.

LOW BIDDERS: On jobs below $500,000 value all low bidder news will be the final reports published on the projects invloved except where award is not made to the low bidder. In this case, a supplementary contract award report will be published.

CONTRACTS AWARDED: Except awards to low bidders previously reported in low bidder stage.

Dates shown are of issue in which last previous report was published.

Symbols and Abbreviations Include:

†	Federal Government
▲	Project of $1,000,000 or over.
B.A.	Bids Asked
ENR	Engineering News-Record
CD	Engineering News-Record Construction Daily

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The Sherman Power Digger has proved itself a champion cost-cutter on thousands of jobs where digging costs were formerly too high.

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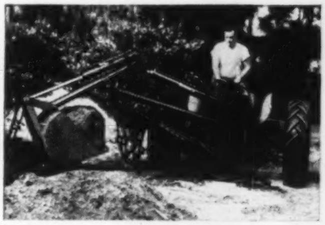
Back-hoe shovels retain their load up to 7 feet, to clear truck bed. The speed and efficiency of this popular digger is apparent once you see it at work.



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Digs through asphalt and macadam—works well in hardpan clay, gravel, shale and stony ground. Easily operated with four simple hand controls.

• • •

Mounted on a rubber-tired Ford or Ferguson Tractor with Sherman auxiliary transmission providing 12 forward, 3 reverse and 3 power take-off speeds. Length only 13′ 4″; height, 10′ 3″; width, 5′ 6″. From one position will reach to dig 10 feet behind tractor in 140° arc and to depth of 8 feet.

For complete information and name of nearest distributor who can show you the money-saving Sherman Power Digger in action, WRITE TODAY to Sherman Products, Inc., Dept. C, 3200 W. Fourteen Mile Road, Royal Oak, Michigan.

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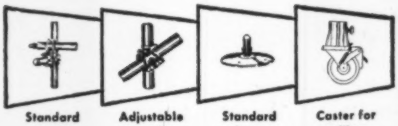
TUBELOX Scaffolding

(Steel or Aluminum)

Here's another of the *many* types of scaffolds we have for every possible scaffold need. It's easily erected to fit any contour. Height, uneven ground, curved surfaces and other difficult conditions are no problem with "TubeLox".

Remember this: We have *all* types of modern scaffolds. That's a convenience *no other supplier* can offer you. Our stocks of scaffolding, spotted in major cities from coast to coast, are the largest and most complete—*one* source for every type scaffold! *Whatever your job . . . we can scaffold it for you with the* RIGHT *scaffold!*

At right: Cross-section of scaffold for curved dome. Below: TubeLox installation for stone work. Only four basic parts are required. Write for Bulletin 10-PTS showing how contractors use TubeLox.



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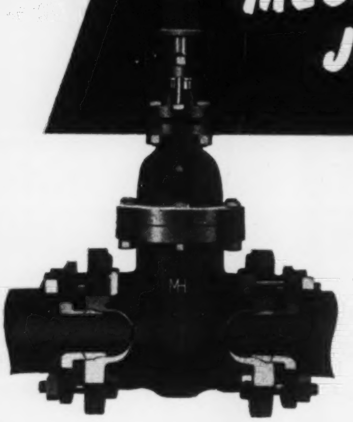

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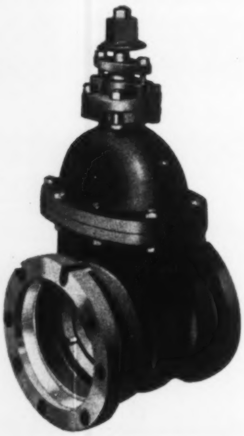

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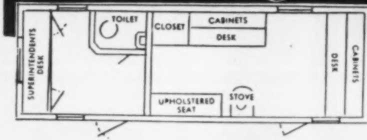

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Langenfelder & Son, Inc.
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These heavy duty field construction offices, which can be provided in three different lengths and with a variety of optional interior equipment, are ENGINEERED to provide maximum service under all conditions of terrain or locaton. Send for free booklet containing cut-away scale drawings, specifications and prices.

American Trailer Co., Inc.
4030 WISCONSIN AVE.
WASHINGTON 16, D. C.

Founded in 1936—House Trailer Headquarters in Our Nation's Capital for 16 Years.

(Continued from page 122)

ALA. Purch & Contg. Office, Camp Rucker, Ala. Bids Apr. 8. CD 4/15, under LB.

R. P. Farnsworth & Co., 1515 S. Salcedo St., New Orleans, La., CA **$634,249,** 84 unit HOUSING, Ala 47-4, HUNTSVILLE, ALA. Huntsville Housing Auth. Huntsville, Ala. CD 4/1, under LB.

▲ **Shelby Constr. Co.,** 1108 Canal St., New Orleans, La. Owner Builds. **$1,000,000.** 122 RESIDENCES, PASCAGOULA, MISS.

Southern Builders, Inc., Box 1815, Shreveport, La. CA **$789,330.** CHURCH, SHREVEPORT, LA. St. Marks Episcopal Church, c/o Annan & Gilmer, archts., 525½ Market St., Shreveport, La. CD 4/9, under LB.

▲ **Leroy Highbaugh Sr.,** 509 W. Market St., Louisville, Ky. Owner Builds. **$5,000,000.** 600 RESIDENCES, Shelbyville Road Subdivision, LOUISVILLE, KY.

C. Robert Peter, Jr., 316 S. 5 St., Louisville, Ky. Owner Builds. **$800,000.** 75 HOUSES, Rosedale subdivision, LOUISVILLE, KY. Peyton M. Davis, Realty Bldg., Louisville, Ky., archt.

▲ **Stauffer Chemical Co.,** 420 Lexington Ave., New York 17, N. Y. Separate Contracts. **$2,500,000.** carbon tetra chloride mfg. PLANT, LOUISVILLE, KY. Singmaster & Breyer, 41 E. 42 St., New York 17, N. Y., engrs. CD 11/29/51.

MIDDLE WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES

May 14, Michigan **May 20, Wisconsin**

STREETS AND ROADS

May 14, Michigan **May 16, Indiana**
May 20, Wisconsin

Mich., Flint—B.A. 5/15—City, Water Dpt., 1 story, brick, steel, concrete water treatment plant, $400,000, Extended date. Ayres, Lewis, Norris & May, 500 Wolverine Bldg., Ann Arbor, engrs. CD 4/8.

BIDS ASKED—BUILDINGS

O., Cincinnati—YOUTH CENTER—B.A. 5/27—Juvenile Detention Home, Court House and Court House Annex Comn., 2 story bsmnt. rein.-con. cross-shape youth center, incl. classroom, 2 dormitories, etc. $600,000. Plans deposit $35. Potter, Tyler & Martin, 35 E. 7th St., and Felsberg & Gillespie, Ingalls Bldg., archt. Willard C. Pistler, 4 W. 7 St., consult. engr. CD 3/6/51.

▲† **Ill. Decatur**—DEPOT REPAIR—B.A. 6/6—Dept. Army, 520 Merchandise Mart, Chicago, 54, Ill., 120,000 sq. ft. U. S. Signal Depot, Repair and Maintenance Shop, loading dock, 300 ft. long, $1,000,000.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **OHIO**—State Hy. Dpt., T. J. Kauer, dir., Columbus, Zone 15,

Complete General Constr. Co., 1221 E. Fifth Ave., Columbus, O., CA **$190,700,** est. $194,000, wid'n. and b. conc. resurf. 2.487 mi. C. R. No. 25 A-S-286 (1), Franklin Co.;

A. J. Baltes, Inc., 11 Olive St., Norwalk O., CA **$860,959,** est. $868,100, c. conc. paving, reconstruct water mains 1.957 mi. U. S. R. 20, Sects. (0.00-0.90), (32.24-3292), UI 664 (10), FUI 355 (3), Huron and Sandusky Counties;

Don S. Cisle, Contractor, Inc., 1st. Natl. Bank Bldg., Hamilton, O., CA. **$66,645,** est. $73,100, 11.26 mi. pavement, Proposals Nos. 1 and 2 (1) Preble-SR 177-0.00 (Pt.), (2), Butler-SR 747-2.36, Butler and Preble Counties; CA **$61,687,** est. $66,961, 11.1 mi. pavement Proposals Nos. 1 and 2 (1) Montgomery-SR 741-0.00; (2) Warren-SR 73-9.84, Montgomery and Warren Counties;

Ohio Asphalt Paving Corp., 823 Prospect St., Portsmouth, O., CA. **$61,550,** est. 458,248, 5.8 mi. pavement, SR 125-4.24 (Pt.), Scioto Co.;

City Asphalt & Paving Co., 120 Pike St., Youngstown, O. CA **$71,152,** est. $70,170, 27.61 mi. pavement Proposals 1 to 6 inclusive **(1)** Mahoning-SR 626-0.00, 1.10; **(2)** Mahoning-SR 165-9.80, 12.09 **(3)** Portage-SR 44-12.55, 14.97 **(4)** Portage-SR 88-2.81, 4.54 (Pt.); **(5)** Portage-SR 44-21.30, 23.10 **(6)** Portage-SR 43-.00 (Pt.), Mahoning and Portage Counties;

The Shelly Co., Thornville, O., CA **$78,029,** est. $80,430, 22.58 mi. pavement Proposals Nos. 1 to 3 inclusive **(1)** Monroe-SR-26.0.00, (6.71 Graysville); **(2)** Monroe-SR 26-12.64, 14.43 **(2a)** Monroe-SR 26-7.76, 12.64, 14.43 **(3)** Washington-SR 676-17.08, Monroe and Washington Counties. Grand total $1,390,722. Bids Apr. 22 CD 4/9.

▲ **Thompson-Starrett Co.,** 444 Madison Ave., New York 22, N. Y. CA Est. **$3,500,000,** hangar (to be rented to City of Cleveland) at Cleveland Hopkins Municipal Airport, CLEVELAND, O. Owner, c/o contractor.

▲ **ILLINOIS**—State Div. Hys., Springfield,

H. H. Gunther Constr. Co., 600 E. Main St., Galesburg, Ill., LB, **$217,931,** conc. base course wid'n. 9.1 mi. U. S. 34 Knox and Warren Counties; LB, **$182,957** bit. 9.1 mi. U. S. 34, Knox and Warren Counties;

Madison Constr. Co., Box 222, Edwardsville, Ill., LB **$339,257,** conc. base course wid'n. 20.72 mi. Ill. 140 Madison Co.; LB **$683,000,** bit. resurf. 28.11 mi. Ill. 2 and 16 Christian and Montgomery Counties;

Black Top Roads Co., 1929 N. Narragansett Ave., Chicago, 39, Ill., LB, **$253,724,** bit. resurf. 10.44 mi. Alt. U. S. 30; LB **$196,344,** bit. resurf. 6.74 mi. Ill. 19, Du Page Co.;

Rockford Black Top Constr. Co., 1615 Westchester Rd., Rockford, Ill., LB, **$93,772,** bit. resurf. 3.27 mi.

Ill., Winnegabo Co.; LB, **$85,116,** bit. resurf. 2.31 mi. U. S. 20, Freeport, Stephenson Co.;

Triangle Constr. Co., 480 N. Evergreen Ave., Kankakee, Ill., LB, **$295,963,** grading 4.58 mi. Ill. 26, Kankakee Co.; LB, **$159,706,** bit. resurf. 4.58 mi. Ill. 26, Kankakee Co.;

Scheflow & Monaham, 466 Main St., Glen Ellyn, Ill., LB **$233,286,** c. conc. 2.56 mi. Ill. 131; LB, **$93,544,** conc. base course wid'n. 6.67 mi. Ill. 19, both Du Page Co.;

E. T. Simonds Constr. Co., 202 W. Willos St., Carbondale, Ill., LB, **$348,839.** concrete base course wid'n. 27.83 mi. Ill. 2 and 16, Christian and Montgomery Counties;

Walsh Oil Co., N. Broadway, Joliet, Ill., LB, **$277,709,** bit. resurf. 8.49 mi. Ill. 7, Cook and Wills Counties;

Sankey Bros. Inc., 402 Illinois Bldg., Springfield, Ill., LB, **$220,402,** bit. resurf. 8.51 mi. U. S. 67, Morgan and Scott Counties;

Sangamo Constr. Co., 700 N. MacArthur Blvd., Springfield, Ill., LB, **$162,200,** c. conc. pavement relocation 0.82 mi. U. S. 36, Sangamon Co.;

McCalman Constr. Co., 619 Secton St., Danville, Ill., LB, **$119,939,** c. conc. 0.48 mi. Ill. 10, Vermilion Co.;

Quad City Constr. Co., Rock Island, Ill., LB, **$392,428,** c. conc. 3.43 mi. U. S. 30, Whiteside Co.;

Jansen & Schaefer, 1500 Broadway, Pekin, Ill., LB, **$107,021,** concrete base course wid'n. 5.86 mi. Ill. 116, Woodford Co.;

MacLair Asphalt Co., 6000 Collinsville Rd., East St. Louis, Ill., LB, **$126,736,** bit. resurf. 4.42 mi. Ill. 127, Clinton Co.;

Gallagher Asphalt Co., 181 St. and Indiana Ave., Thornton, Ill., LB, **$195,734,** bit. resurf. 5.86 mi. Ill. 116, Woodford Co.;

Moss Constr. Co., R. R. No. 3, Paris, Ill., LB, **$223,946,** earth grading, culverts, 2.56 mi. Ill. 131, Du Page Co.;

R. W. Ford, 704 S. Market St., Marion, Ill., LB **$396,686,** grade construction, and conc. paving and building 2 bridges 0.63 mi. U.S. 45, Saline Co.;

Frank C. Feutz, 901 Tenbroeck St., Paris, Ill., LB **$343,466,** bit. resurf. 10.32 mi. Ill. 1 and 3.01 mi. of same on U.S. 40, Clark and Edgar Counties;

Zimmerly Constr. Co., Marshall St., Parish, Ill., LB **$218,175,** concrete base wid'n. 9.84 mi. Ill. 1, Clark and Edgar Counties;

Gem Contg. & Paving Co., Carthage, Ill., LB, **$232,790,** bit. resurf. 9.88 mi. U.S. 24, Adams Co.;

I. D. Lain Co., 1901 E. Adams St., Springfield, Ill., LB, **$228,615,** concrete base course and ditch reconstruction 8.29 mi. U.S. 67, Morgan and Scott Counties;

Fuller Paving Constr. Co., 2150 Lincoln Park West Chicago, 14, Ill., LB, **$457,058,** bit. resurf. 21.93 mi. Ill. 140, Madison Co.;

J. P. Wetherby Constr. Co., 1016 W. Superior S., Ottawa, Ill. LB **$88,206,** bit. 3.01 mi. F.A.S. 258, La Salle Co.;

Mitchell Constr. Co., 216 E. Madison St., Herrin, Ill., LB, **$293,807,** c. conc. paving grav. or crushed stone base wid'n. with bit. surf. tr. 1.78 mi. Franklin Co.;

Jefferson Asphalt Co., 1209 Casey St., Mt. Vernon, Ill., LB, **$263,099,** bit. resurf. 10.44 mi. Ill. 37, Fayette and Effingham Counties;

J. C. O'Connor & Sons, Inc., 2104 Miner St., Fort Wayne, 6, Ind., LB, **$210,596,** conc. base course wid'n. 10.44 mi. Ill. 37, Fayette and Effingham Counties;

Geneva Constr. Co., 303 Old 2nd National Bank Bldg., Aurora, Ill., LB, **$111,105,** bit. 9.91 mi. F.A.S. 110, Kane Co.;

McMahan Constr. Co., 107 E. Ninth St., Rochester, Ill., LB, **$363,320,** c. conc. 3.66 mi. U.S. 36, Sangamon Co.;

Giertz-Melahn Asphalt Co., 57 Douglas Ave., Elgin, Ill., LB, **$207,545,** bit. resurf. 8.98 mi. Alt. U.S. 30, De Kalb Co.;

Allied Asphalt Paving Co., 13912 S. Halsted St., Chicago, 27, Ill., LB, **$588,454,** bit. resurf. Washington Blvd., Randolph St., Butterfield Rd. and 22 St., Cook and Du Page Counties. CD 4/11;

Rome Constr. Co., Bloomington, Ill., LB, **$107,739,** bit. tr. on gravel or crushed stone surf. 6.12 mi. F.A.S. 351, Livingston Co.;

J. C. Baemer, Hillsboro, Ill., LB, **$97,369,** bit. tr. on gravel or crushed stone surf. 3.98 mi. F.A.S. 732, Montgomery Co.;

S. J. Groves & Sons Co., 1104 N. Reynolds St., Springfield, Ill., LB, **$890,000.** concrete base course wid'n. 22.04 mi. U.S. 45, Effingham, Shelby, Cumberland and Coles Counties;

Arcole Midwest Corp., 3225 Main St., Evanston, Ill., LB, **$579,777,** bit. resurf. 22.27 mi. U.S. 45, Effingham, Shelby, Cumberland and Coles Counties;

Manta & Oren, 109 Banker St., Effingham, Ill., and **C. J. Mortiz, Inc.,** Register Bldg., Effingham, Ill., LB. **$495,963,** conc. base course 7.34 mi. U.S. 40 and 45, Effingham Co. Bids Apr. 25. CD 4/18.

▲ **WISCONSIN**—State Hy. Comn., Madison,

L. G. Arnold, Inc., P.O. Box 228, Eau Claire, Wis., CA **$4,598,788** Option C, bridges, Contr. 1, Trempealeau U.S.H. 53 Road, S.T.Hy. 93, Proj. S-0119 (5), Trempealeau and La Crosse Coumties Bids Apr. 22. CD 4/25, under LB.

† **Forrester Constr. Co.,** 600 Sill Bldg., Flint, Mich. CA **$920,890.** barracks, mess hall, admin. bldgs., Oscoda Air Force Base, OSCODA, MICH. U. S. Eng., 1900 Cadillac Tower, Detroit, Mich. CD 1/4.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Aetna Constr. Co.,** Hathaway Ave., Garfield Heights, O. Owner Builds. Approx. **$1,220,750,** 89 frame DWELLINGS, incl. installing sewer, water and paving, Hathaway Ave., GARFIELD HEIGHTS, O. Morton Gross, c/o owner, engr.

Zehman-Wolf Constr. Co., 13484 Cedar Rd., Cleveland Heights, O., Owner Builds. Approx. **$689,000.** 53 one story HOUSES, Stockton Rd. near Libby Rd., MAPLE HEIGHTS, O. Joseph McSteen, c/o owner, engr.

Belmont Constr. Co., 130 Plaza St., Park Forest, Ill. Owner Builds, **$950,000,** 100 RESIDENCES, PARK FOREST, ILL. Fitch & Schiller, 100 W. Chicago St., Chicago, 10, Ill., archts. Awarded Apr. 21.

▲ **M. W. Kellogg Co.,** 225 Broadway, New York 7, N. Y., CA **$1,000,000,** ISO-OCTYL alcohol PLANT. WOOD RIVER, ILL. Standard Oil Co. of Indiana, 91 S. Michigan Ave., Chicago, Ill. CD 7/3/51.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
BRIDGES
May 20, 21, Texas
STREETS AND ROADS
May 20, 21, Texas

BIDS ASKED—BUILDINGS

▲ **N. M., Monument**—REFINERY—Bids Asked—Famariss Oil & Refining Co., Hobbs, remodeling and expansion of refinery. $1,250,000. CD 4/15.

▲ **Tex., Arlington**—PLANT—Bids Asked—General Motors Corp., c/o Argonant Realty Div., G. M. Smitten, General Motors Bldg., Detroit, Mich., mfg. and assembly plant, 225-acre site south of here, $18,000,000. Wyatt C. Hedrick, 904 Fort Worth Ave., Dallas, archt. CD 10/26.

▲ **Tex., El Paso**—REFINERY—Bids Asked—The Texas Co., 720 San Jacinto St., Houston, modernization and expansion of refinery. $1,250,000. CD 4/15.

Tex., Rockdale—DWELLINGS—Bids Asked—Calhoun Development Co., Port Lavaca, 85 addnl. dwellings, $700,000. R. Graham Jackson & Frank C. Dill, 2506 Richton St., Houston, archts. CD 4/24.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲† **Geo. Bennett Constr. Co.,** 1520 Central Ave., Kansas City, Kan. CA **$1,430,063,** est. $1,815,063. Runways, taxiways, aprons, Grand view Air Force Base, ENG 23-028-52-24, GRANDVIEW, MO. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. CD 41, under LB.

† **Winn-Senter Constr. Co.,** Railway Exchange Bldg., Kansas City 6, Mo. CA **$708,204,** est. $747,747. 4 buildings, crash and fire station, maintenance hangar, shops, control tower, base operation bldg., readiness bldg., Grandview Air Force Base, ENG. 23-028-52-47, GRANDVIEW, MO. U. S. Eng., 601 Davidson Bldg., Kansas City 8, Mo. Bids Apr. 10. CD 4/17, under LB.

▲† **J. A. Terteling & Sons,** 4011 Fairview Ave., Boise, Idaho, LB **$1,420,348,** est. $1,909,751, construct earthwork, concrete canal lining and structures for Courtland canal, Station 772 plus 00 to 1503 plus 00. Spec. DC 3680, Missouri River Basin Proj., Bostwick Div., NEBRASKA. Bureau Reclamation, Dpt. Interior, Superior, Neb. Bids Apr. 22. CD 4/2.

▲† **Mississippi Valley Eng. & Constr. Co.,** 787 S. Willett St., Memphis, Tenn., CA. **$1,131,890,** est. $949,602, bank protection on Arkansas River, OKLAHOMA. U. S. Eng., Box 61, Tulsa 12, Okla. Awarded Apr. 14. CD 2/5.

† **R. B. Stovall Constr. Co.,** 6543 Forest Park Rd., Dallas, Tex. CA. **$795,785,** apron extens. Amarillo Air Force Base, Inv. No. Eng 34-066-52-14, AMARILLO, TEX. U. S. Eng., Box 61, Tulsa 2, Okla. Bids Feb. 21. CD 2/21, under LB.

† **U. S. Eng.,** Box 1538, Albuquerque, N. M. concelled bids to have been opened Apr. 17, (A) guided missile laboratory, classrooms, shop, Approx. **$500,000,** (B) outside utilities, Approx. **$60,000,** (C) 18,000 sq. yd. asphl. paved parking area, **$75,000,** at Fort Bliss, Serial No. ENG 29-005-52-31, EL PASO, TEX. CD 4/1.

▲ **NEW MEXICO**—State Hy. Dpt., Capitol Bldg., Santa Fe,

Lowdermilk Bros., Los Alamos, N. M., CA, **$609,918,** grading, minor drainage structures, one multiple concrete box culvert 40 ft. long, one concrete, steel brige 164 ft. long, watering, rolling, misc. constr. 6.815 mi. N. M. Hy. Rte. No. 3 between Questa and Arroyo Hondo, FAP No. F-177 (2), Taos Co.;

Allison & Haney, 1412 N. Broadway, Albuquerque, N. M. CA. **$157,533,** bit. top course surf., asph. and stone chips sealing, misc. constr. 7.983 mi. N. M. Hy. Rte. 392 from Porter-east. FAP No. S-256 (1), Quay Co.;

Skousen Constr. Co., Springer Bldg., Albuquerque, N. M. CA. **$139,607,** grading, reshaping present leveling course, prime coat, bit. top course surf., asph. and stone chips sealing 11.3 mi. N. M. Hy. Rte. 180 between Silver City and Lordsburg, SP No. FAP 168, Hidalgo Co.;

G. I. Martin, 400 S. California St., Albuquerque, N. M. CA. **$163,932,** asph. and stone chips sealing, stockpiling surf. mat. 90.239 mi. U. S. Hy. Rte. 54 between Obar-Tucumcari on N. M. Hy. Rte. No. 18 from 6 mi. east of Ragland to Tucumcari, N. M. Hy. Rte No. 86 from Ragland to the Quay-Roosevelt County line, SP No. 572, Quay Co. Grand total $1,070,090. Bids Apr. 25. CD 4/17.

▲ **NEW MEXICO**—State Hy. Dpt., Capitol Bldg., Santa Fe,

Henry Thygesen & Co., 424 E. McKinley St., Albuquerque, N. M., LB, **$94,610,** asph. and stone chips sealing 51.268 mi. U. S. Hy. Rte. 66 from Santa Rosa west to Torrance-Guadalupe Co. line, U. S. Hy. Rte. 84

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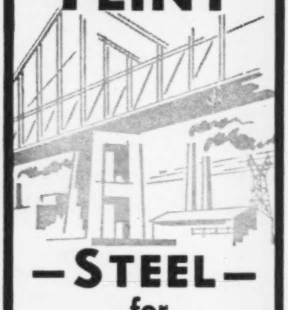

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Lowdermilk Bros., Los Alamos, N. M., LB, **$474,747,** hot plant asphaltic pavement, misc. constr. 9.963 mi. U. S. Hy. Rte. 70-80 between Deming and Las Cruces, FA Proj. No. FI-143 (5) Dona Ana Co.;

Brown Contg. Co., 3525 N. 4 St., Albuquerque, N. M., LB, **$518,338,** grading, 4 multiple concrete box culverts each over 20 ft. clear span, one continuous span rein.-con. slab bridge 147 ft. long, watering and rolling, misc. constr. 16.917 mi. U. S. Hy. Rte. 54 between Corona and Carrizozo, FAP No. F-194 (5), Lincoln Co.;

Floyd Haake, Agua Fria, Santa Fe, N. M., LB, **$125,247,** bit. top course surf. asph. and stone chips sealing, misc. constr. 6.883 mi. N. M. Hy. Rte. 65 between Mosquero and Bueyeros, FAP No. S-117 (1), Harding Co.;

Wheeler & Trotz, Albuquerque, N. M., LB, **$94,988,** bit. top course surf. asph. and stone chips sealing, misc. constr. 5.258 mi. N. M. Hy. Rte. No. 18 between Clayton and Nara Visa, FAP No. S-167 (4) Quay Co. Bids Apr. 24. CD 4/17.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Belvidere Constr. Co.,** Grandview, Mo. CA **$3,000,000.** 192 HOUSES, 52 DUPLEXES on 320 acre site, HICKMAN MILLS, MO. Ruskin Land Co., c/o Enos A. Axtel, atty., Lathrop Bldg., Kansas City 6, Mo. Hare & Hare, 114 W. 10 St., Kansas City 6, Mo., subdivision planners, Chas. Haskin, Finance Bldg., Kansas City 6, Mo., engr.

▲ **I. E. Millstone Constr. Co.,** 4343 Clayton Ave., St. Louis 10, Mo. CA **$12,699,430**. general contract;
Kremer-Hicks Co., 3974 Delmar Blvd., St. Louis 8, Mo. CA **$2,070,000.** heating contract;
Eugene Duklauer, Inc., 215 E. 38 St., New York, N. Y. CA **$1,972,000.** plumbing contract;
E. O. Dorsch Electric Co., 2011 Olive St., St., Louis 3, Mo. CA **$910,500,** electrical, primary and secondary contract 1,736 DWELLING units, incl. twenty 11 story brick rein.-con. apartment bldgs., Proj. Mo. 1-4, ST. LOUIS, MO. St Louis Housing Auth., David Murphy, acting exec., 901 Washington Ave., St. Louis 1, Mo. Grand total $17,651,930. Bids Mar. 27, awarded Apr. 25. CD 4/1, under LB.

▲ **Frank E. Zykan, Inc.,** 1842 Northfield Dr., Overland 14, Mo. 1. Owner Builds. **$1,000,000.** one hundred and seventy-eight 1½ story, bsmnt. RESIDENCES, incl. concrete streets, sanitary and storm sewers, etc. in Meadowbrook Downs subdivision adjacent to 9800 Page Ave., Overland, ST. LOUIS COUNTY, MO.

▲ **R. F. Bell Constr. Co., Inc.,** 3200 W. Dallas St., Houston, Tex., CA. **$2,771,387.** 508 low-cost DWELLING units for total 72 bldgs., Tex 9-11-G, DALLAS, TEX. Dallas Housing Auth., 2525 Lucas Dr., Dallas, Tex., Bids Apr. 25. CD 4/8.

▲ **A. J. Rife,** 2608 Inwood Rd., Dallas, Tex. CA **$2,650,330** est. $3,750,000. 500 DWELLING units for total 70 bldgs., Tex. 9-11-B, DALLAS, TEX. Dallas Housing Auth., 2525 Lucas Dr., Dallas, Tex. Bids Apr. 21, awarded Apr. 25. CD 4/29, under LB.

Diamond Alkali Co., Deer Park, Tex., Own Forces. Approx. **$750,000.** perchlorethlyne PLANT unit, HOUSTON, TEX. CD 4/28.

▲ **Brown & Root,** P.O. Box 3, Houston, Tex., CA. Approx. **$2,223,500.** INDUSTRIAL BLDG. and MFG. PLANT, LONGVIEW TEX. Powers Mfg. Co., Longview, Tex. CD 4/22.

▲ **Procon, Inc.,** 75 E. Jackson Blvd., Chicago 4, Ill., CA Approx. **$1,775,000.** platforming refinery unit, 6,500 bbls. daily capacity;

Refinery Constr. Co., 5010 Kelvin Dr., Houston, Tex., CA Approx. **$300,000,** OFFICE, TEXAS CITY, TEX. Republic Oil Refining Co., Texas City, Tex. CD 12/27.

▲ **Republic Oil Refining Co.,** Texas City, Tex. cancelled bids, CRUDE REFINERY DISTILLATE UNITS, est. **$5,550,000;** 2nd floor addn. to LABORATORY, **$150,000,** TEXAS CITY, TEX. CD 12/27.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS

BRIDGES
May 21, 22, California

STREETS AND ROADS
May 21, 22, California

BIDS ASKED—BUILDINGS

Calif., Oakland—SCHOOL—B.A. 5/20—Bd. Educ., 1025 Second Ave., new Washington Elementary School, Shafter and 61 Sts. $800,000. Plans deposit $25. Wm. Schirmer, 1419 Broadway, archt. CD 10/30/45.

▲ **Wash., Walla Walla**—SECURITY—B.A. 5/28—State Dpt. Pub. Institutions, Olympia, minimum-security bldg. at State Penitentiary. $1,500,000. J. W. Maloney, Central Bldg., Seattle, Zone 4, archt. CD 1/22.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

CALIFORNIA—State Div. Hys., P. Wks. Bldg., Sacramento,
Gordon H. Ball, San Ramon Valley Land Co. and Trewhitt, Shields & Fisher, State Route, Danville, Calif., CA, **$857,980,** 6 overcrossings, roadwork between Tulare Airport and Tagus, Tulare Co. Bids Apr. 9, awarded Apr. 22. CD 4/16, under LB.

▲ **CALIFORNIA**—State Div. Hys., **120 S. Spring St.,** Los Angeles,
Bressi & Bevanda Constructors, Inc., Box 439, North Hollywood, Calif., CA, **$2,238,685,** road construction structures, etc. 4.4 mi. between 2.2 mi. south of Carlsbad and Buena Vista Creek, San Diego Co. Bids Apr. 3, awarded Apr. 24. CD 4/9, under LB.

▲† **Dinwiddie Constr. Co.,** Crocker Bldg., San Francisco, Calif., CA, **$3,253,100,** 4 storehouses, etc. Naval Air Station, NOY 28950, Spec. 30554, ALAMEDA, CALIF. Twelfth Naval Dist., San Bruno, Calif. Bids Apr. 15, awarded Apr. 23. CD 4/22, under LB.

▲† **L. C. Anderson Co.,** 3040 Hancock St., San Diego, Calif., CA. **$1,556,606,** 2 story, rein.-con. electronics warehouse, Naval Air Station, NOY 71065, Spec. 32619, SAN DIEGO, CALIF. Dpt. Navy, Eleventh Naval Dist., San Diego, Calif. Bids Mar. 26. CD 4/1, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Thorburn & Logozo,** 4608 36 Ave. S. W., Seattle, Wash., CA, **$1,020,383,** 36 HOUSES, COMMISSARY BLDG., utilities, etc., at Diablo Dam, SEATTLE, WASH. City of Seattle, County-City Bldg., Seattle, 4, Wash. Bids Apr. 9. CD 4/15, under LB.

Lovell Constr. Co., 12510 15 Ave. N. E., Seattle, Wash., Day Labor, **$841,000,** 69 HOUSES 23 Ave. N. E. 2 Ave. N W., 30 Ave. N. E., Ashworth and Linden Aves., 36 Ave. N. E., 8 Ave. N. E., E. 97 to N. 104 Sts., SEATTLE, WASH.

▲ **Myers & Major,** Vancouver, Wash. (Work done by Day Labor), CA, **$2,769,500,** 300 HOUSING units at Naval Air Station, WHIDBEY ISLAND, WASH. Thirteenth Naval Dist., 1611 W. Wheeler St., Seattle, Wash. Bids Mar. 5. CD 3/11, under LB.

▲ **Biltmore Homes, Inc.,** 9434 Long Beach Blvd., South Gate, Calif., CA, **$1,574,224** 177 frame, stucco DWELLINGS in Tract 16630, COMPTON, CALIF, Barhugh Estates, Inc., 9434 Long Beach Blvd., South Gate, Calif. Southwest Drafting Service, 2724 Florence Ave., Los Angeles, Calif., archts.

▲ **Harry Hershberg,** 6052 Venice Blvd, Los Angeles, Calif., CA, **$1,305,700,** Centennial High SCHOOL, COMPTON, CALIF. Compton Union High School Dist., 601 S. Acacia St., Compton, Calif. Bids Apr 18. CD 4/28, under LB.

▲ **M. J. Brock & Sons,** 2894 Rowena St., Los Angeles, Calif., CA, **$1,700,000,** 182 frame, stucco DWELLINGS in Tract 17568, LONG BEACH, CALIF. Bel-Estate, Inc., 4439 Atlantic Ave., Long Beach, Calif. Wm. A. Locket, Farmers & Merchants Bldg., Long Beach, Calif., archt.

▲ **Weedman Bldg. Co.,** 590 S. San Vincente Blvd., Los Angeles, Calif., CA, **$2,000,000,** 195 frame, stucco DWELLINGS, in Tract 16392, Pacoima District, LOS ANGELES, CALIF Sanford B. Schulhofer, 590 S. San Vincente Blvd., Los Angeles, Calif. Southwest Drafting Service 2724 W. Florence Ave., Los Angeles, archt.

▲ **James I. Barnes Co.,** 262 S. Lake St., Los Angeles, Calif. LB, **$1,129,000,** 4 story, rein.-con. LIBRARY, LOS ANGELES, CALIF. Bd Law Library Trustees, Hall of Records, Los Angeles, Calif. Bids Apr. 23. CD 4/3.

▲ **C. W. Driver, Inc.,** 3416½ W. First St., Los Angeles, Calif., LB, **$1,106,800,** general contract, Southern California RECEPTION CENTER and CLINIC INSTITUTION bldgs. for California Youth Authority, NORWALK, CALIF. State Div. Architecture, P. Wks. Bldg., Sacramento, Calif. Bids Apr. 22. CD 3/19.

Landis Bldg. & Investment Co., 9363 Wilshire Blvd., Los Angeles, Calif., Owner Builds, **$664,000,** 83 frame, stucco DWELLINGS, Tract 384 and Tract 17879, ONTARIO and CLAREMONT, CALIF, respectively. Southwest Drafting Service, 2724 Florence Ave., Los Angeles, Calif., engr.

▲ **Pontico Poulos, Inc.,** 548½ N. Hollywood Way, Burbank, Calif., Owner Builds, **$2,690,000,** 269 frame, stucco DWELLINGS, Strathern and Reseda Sts., RESEDA, CALIF. Paul J. Duncan, 13310 Moorpark St., Sherman Oaks, Calif., archt.

Murray M. Strauss, 6217 Whitsett Ave., North Hollywood, Calif., CA, **$900,000,** 91 frame, stucco DWELLINGS, west of SAN FERNANDO, CALIF. Beverly Grange Corp., 9434 Long Beach Blvd., South Gate, Calif. Southwest Drafting Service, 2724 W. Florence St., Los Angeles, Calif., engr.

Pruit Constr. & Equipment Co., 8617 4 Ave., Inglewood, Calif., CA, **$684,000,** 137 frame, stucco DWELLINGS, Ferndale, Leland, Lukay, Newgate and Alclad Sts., SANTA FE SPRINGS, CALIF. Lelang Gardnes, Inc., 8617 4 Ave., Inglewood, Calif.

▲ **Bollinbacker & Kilton,** 945 N. La Cienega Blvd., Los Angeles, Calif., CA, **$1,972,000,** 284 frame, stucco DWELLINGS in Tract 17330 and Tract 17920, TORRANCE, CALIF. Builders Mortgage Co., 8491 Santa Monica Blvd., Los Angeles, Calif.

Tarryton Corp., 9244 W. Olympic St., Beverly Hills, Calif., CA, **$655,300,** 56 frame, stucco DWELLINGS, Carnell, Hester, Cole and Tropico Sts., WHITTIER, CALIF. Dittmar Corp., 9244 W. Olympic St., Beverly Hills, Calif.

ALASKA

BIDS ASKED—BUILDINGS

▲† **Alaska, Bethel**—HOSPITAL—B.A. 5/27—Bureau Indian Affairs, Alaska Native Service, Interior Bldg., 19 and C Sts., Wash. 25, D. C., hospital, service and quarters bldg. $1,775,000. Foss, Malcolm & Olsen, Juneau, archts. CD 1/4.

† **Alaska, Anchorage**—SCHOOL—B.A. 6/4—Alaska P. Wks., Dpt. Interior, Juneau, 22,700 sq. ft. Woodland Park Elementary School, Proj. Aaa 50-A-130. $500,000. Plans deposit $25. Manley & Mayer, Anchorage, archts. CD 11/1.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Howard S. Wright & Co.**, 407 Yale Ave., N., Seattle, Wash. and **Guy. E. Atkinson Co.**, 10 W. Orange Ave. South, San Francisco, Calif. CA est. **$35,000,000**, PULP MILL, near KETCHIKAN, ALASKA. American Viscose Corp., 1617 Pennsylvania Blvd., Phila. Pa. and Puget Sound Pulp & Timber Co., Laurel St., Bellingham, Wash. CD 6/11.

† **S. Patti Co. & McDonald Constr. Co.**, Anchorage, Alaska, CA. **$812,866**, ACS facilities, Inv. 52-45, near ANCHORAGE, ALASKA. U. S. Eng., Anchorage, Alaska. Bids Mar. 18. CD 3/25, under LB.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

STATE HIGHWAY LETTINGS
BRIDGES
May 12, Ontario

BIDS ASKED—BUILDINGS

B. C., Vancouver—HOUSING—B.A. 5/13—Central Mortgage & Housing Corp., 360 Homer St. 100 houses, Housing Project 6-Z-5 at Fraserview, Vancouver suburb, $900,000. Plans deposit $100. J. L. Adams, c/o owner, regional engr. CD 10/18/50.

Ont., Oakville—HOUSING—B.A. 5/20—Central Mortgage & Housing Corp., 441 Queen's Quay W., Toronto, housing development, incl. 75 homes on 50 acre site west of here, $750,000. Plans deposit $100. CD 2/13.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

P. W. Graham & Sons, Ltd., Imperial Bank Bldg., Moose Jaw, Sask., CA, **$900,000**, 4 buildings at R.C.A.F. Station, NAMAO, ALTA. Defence Constr. Ltd., 400 Kensington Bldg., Winnipeg, Man. Bids Mar. 4. CD 2/8.

▲ **Thompson Constr.** (Chemong) Ltd., 9 Richmond St. E., Toronto, Ont., CA, **$1,035,000**, electric power station to generate 7,500 hp. by late 1953, at Cape Broyle, St. John's, NEWFOUNDLAND, Newfoundland Light & Power Co., Ltd. Water St. St. Johns, Newfoundland. Awarded Apr. 23.

▲ **Thompson Constr. (Chemong) Ltd.**, 9 Richmond St. E., Toronto, Ont., CA, **$12,700,000**, electric power development at Horse Cops, dams, canals, pipe lines, penstocks and surge tanks, ST. JOHN'S NEWFOUNDLAND, Newfoundland Light & Power Co. Ltd., Water St., St. John's, Newfoundland. Awarded Apr. 23. CD 3/20/50.

BUILDINGS

LOW BIDS AND CONTRACTS

Principal Investments Ltd., 67 Richmond St. W., Toronto, Ont., Owner Builds, **$750,000**, 5 story, bsmnt., retail STORE and OFFICE bldg., Balmuto and Bloor W. Sts. TORONTO, ONT.

▲ **Principal Investments Ltd.**, 67 Richmond St. W., Toronto, Ont., Owner Builds, **$2,000,000**, SHOPPING CENTER, Bloor East and Yonge Sts., TORONTO, ONT. A. Berlin, c/o owner, ch. engr. CD 4/9.

▲ **R. E. Stewart Constr. Corp.**, 226 S. Wellington St., Sherbrooke, Que., CA, Approx. **$1.500,000**, MILL, MACHINE SHOP, CRUSHING and DRYING MILL, OFFICES, etc., ASBESTOS, QUE. Dominion Asbestos Mines Ltd., 660 W. Ste. Catherine St., Montreal, Que. Denoven Ltd., 323 40 Ave., Lachine, Que., engrs. CD 10/25.

▲ **Louis Donolo, Inc.**, 8320 St. Lawrence Blvd., Montreal, Que., CA, **$1,400,000**, 5 story, 62x282 ft., 3 story, 64x138 ft., 3 story, 42x144 ft., rein.-con., brick, stone COLLEGE bldgs., NICOLET, QUE. Seminary of Nicolet, Nicolet, Que. Bids Mar. 15. CD 3/10.

▲ **Burns & Dutton Concrete & Construction Co. Ltd.**, 5440 First St. W., Calgary, Alta., CA, Approx. **$7,300,000**, REFINERY and townsite Uranium City, 450 airmiles northwest Prince Albert, Sask., 150 acre townsite, 500 ton capacity MILL at Ace Lake uranium development, GOLDFIELDS, SASK. El Dorado Mining & Refining (1944) Ltd., P.O. Box 379, Ottawa, Ont. Awarded Apr. 23. CD 10/26.

LATIN AMERICA

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Constructora Jorge Larrea, Direccion Conocido, Monterrey, N.L., CA **$800,000**. canalization of Santa Catrina River, MONTERREY, MEXICO, Sira. de R. H. Laseo de la Reforma, 69, Mexico City, Awarded Apr. 25. CD 2/27/50.

(Proposal Advertisements see pp. 113 to 115)

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Bids—Low Bids—Contracts—Second Section

NEW ENGLAND

BIDS ASKED—HEAVY CONSTRUCTION

† **Me., Brunswick**—CLUB—B.A. 5/22—Dist. P. Wks. Office, First Naval Dist., 495 Summer St., Boston Mass., enlisted men's club at U S. Naval Air Station, NOY 29603, Spec. 31257. Plans deposit $15. CD 10/30.

BIDS ASKED—BUILDINGS

Mass., Springfield—SCHOOL—B.A. 5/14—City, Dpt., P, Bldgs., City Hall, Memorial Elementary School, $540,000, Morris W. Maloney, 220 Dwight St., archt. CD 4/10.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **Dist. P. Wks. Office,** First Naval Dist., 495 Summer St., Boston, Mass. cancelled bids to have opened May 6, jet fuel storage and distr. systems U. S. Naval Air Landing Strip, NOY 71170, Spec. 32724, SANFORD, ME. CD 4/2.

▲ **MASSACHUSETTS**—Commonwealth of Mass., Dpt. P. Wks., 100 Nashua St., Boston, rejected bids Mar. 4, state hy. relocation Auto Rte. 20, Chicopee and Ludlow. LB, **$1,262,913,** est. $1,500,000. CD 3/10 under LB.

C. Capone Constr. Co., Inc., 32 Wellsmere Rd., Roslindale, Mass. CA **$530,930,** est. $500,000. Sec. 85 Contr. 151 sewer Mill Brook Valley, Lexington, BOSTON, MASS. State, Metropolitan Dist. Comn., Sewerage Div., 20 Somerset St., Boston, Mass. Bids Apr. 17, awarded Apr. 24. CD 4/22 under LB.

† **Jefferson Constr. Co.,** 75 First St., Cambridge, Mass., LB **$763,591,** supply dept. office and exten. Bldg. 16 Naval Air Station, Spec. 31247, QUONSET POINT, R. I. P Wks. Office, First Naval Dist., 495 Somerset St., Boston, Mass. Bids Apr. 22. CD 4/2.

BUILDINGS

LOW BIDS AND CONTRACTS

Grande & Son, Inc., 425A Broadway, Everett, Mass. LB **$779,000.** Junior High SCHOOL, LYNNFIELD, MASS. Town, School Bldg. Comn., Chemical Hall, Fire Station Rte. 1 and Salem St., South Lynnfield, Mass. Bids Apr. 24. CD 4/8.

Michael Iodice, 151 Warren St., Watertown, Mass. Owner Builds **$512,000.** 32 RESIDENCES, Iodice Gardens, WATERTOWN, MASS. B. C. Gallo, 409 Chelsea St., East Boston, Mass., archt.

Kelly Corp., 25 Forest St. Pl., Arlington, Mass. Owner Builds. **$960,000.** 80 RESIDENCES, Bedford St., WOBURN, MASS.

▲ **Frouge Constr. Co., Inc.,** 74 Goodsell St., Bridgeport, Conn., LB **$1,397,000,** moderate HOUSING, Millridge Site, DANBURY, CONN. City Housing Auth., City Hall, Danbury, Conn., CD 12/5.

▲ **H. Wales Lines Co.,** 134 State St., Meriden, Conn., CA **$1,000,000,** 1 story, 98,000 sq. ft., steel, brick concrete, FACTORY, Casper St., DANBURY, CONN. Davis & Geck, Inc., 57 Willoughby St., Brooklyn, N. Y. Leo F. Caproni, 1221 Chapel St., New Haven, Conn. archt.

▲ **E. & F. Constr. Co.,** 84 Wells St., Bridgeport, Conn., LB $1,000,000, COMMUNITY CENTER, Chapel St., between Park and York Sts., NEW HAVEN, CONN. Jewish Center of New Haven, 7 Dwight St., New Haven, Conn. Bids Feb. 4. CD 1/30.

▲ **Mondelci & Benvenuti,** 16 Elm St., New London, Conn., CA, **$,1,096,000,** Central High SCHOOL addn., NEW LONDON, CONN. City Purch. Agt., Municipal Bldg., New London, Conn. Bids Apr. 16. CD 4/24.

MIDDLE ATLANTIC

BIDS ASKED—HEAVY CONSTRUCTION

N. Y., Tonawanda—B.A. 5/19—Tonawanda Town Bd. Municipal Bldg., Kenmore, construct sect. of the East Side Drainage Proj. Contrs. "A" and "B" of Div. IV. $135,000. Plans deposit $50. Nussbaumer & Clarke, 327 Franklin St., Buffalo, Zone 2, consult. engrs.; adv. ENR 5/8. CD 3/25/46.

Md., Baltimore—B.A. 5/21—Bd. Estimates of Mayor and City Council, at office Comptroller, City Hall, Zone 2, wide flange beam bridge and concrete piers and abutments, known as Liberty Road Bridge over Srowden Creek, approx. ½ mi. west of Shervettes Corner in Carroll Co. Patapsco Development, for Dpt. P. Wks., Bureau Water Supply, City Hall. Plans deposit $10. J. S. Strohmeyer, city water engr.; adv. ENR 5/8. CD 11/23.

N Y., Elmira—B.A. 5/21—Town of Elmira, Town Hall, 1223 W. Water St., Contr. 1, sewers north of and incl. W. Church St. Plans deposit $20. Gibbs & Hill, Inc., Penn Station, New York, N. Y. engr.; adv. ENR 5/1. CD 7/17/46.

N. Y., Elmira—B.A. 5/28—Town of Elmira, Town Hall, 1223 W. Water St., Contr. 2, sewers south of W. Church St. and Pumping Station. Gibbs & Hill, Inc., Penn Station, New York, N. Y., engr.; adv. ENR 5/1. CD 7/17/46.

† **Del., New Castle**—FENCING, etc.—B.A. On Or About 6/3—U. S. Eng., 121 N. Broad St., Phila., Pa., security fencing and protective lighting system at New Castle County Airport ENG 36-109-52-403. CD 9/13.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

NEW JERSEY—State Hy. Dpt., State Hy. Office Bldg., Trenton,

Union Bldg & Constr. Co., 631 Main Ave., Passaic, N. J., CA, **$964,134,** paving 2.708 mi. Route 4 Parkway Sects. 6F 7E and 8C from Centennial Ave. to Galloping Hill Rd., Cranford Twp., and Boro of Kenilworth Fed. Proj. U-188 (26) Union Co., CD 4/25, under LB;

A. J. Cunningham & Sons, 370 Newkirk Ave., Trenton, N. J., CA, **$548,158,** constr. 3.947 mi. Route 35 Sect. 7A widn. resurf. from Middletown to Keyport to Townships of Middletown, Holmdel and Raritan, Fed. Proj. F-4 (2), Monmouth Co., CD 4/21, under LB. Bids Apr. 17.

PENNSYLVANIA—State Hy. Dpt., North Office Bldg., Harrisburg,

S. A. Willis, T/A Willis Constr., Branchville, N. J. CA, **$625,077,** overlay and widn. 9.64 mi. existing pavement with crushed aggregate base and bit. surf. 22 ft. wide and widn. and extend 3 structures from east of Lake Wallenpaupack to beyond Shohola Falls, also portion south of Hawley, U. S. 6. Wayne land Pike Counties. Bids Apr. 18. CD 4/22, under LB.

▲ **PENNSYLVANIA**—State Hy. & Bridge Auth., 506 North Office Bldg., Harrisburg,

Schaller & Hoffmeister, East Greenville, Pa., LB, **$1,614,974,** construct 10,236 ft. divided road 24 ft. wide each side of divisor, c. conc. pavement, one deck plate girder bridge, Allentown By-Pass Sect. T.R. U. S. 22, Lehigh Co. Bids Apr 25. CD 3/26.

SOUTH

BIDS ASKED—HEAVY CONSTRUCTION

† **Va., Norfolk**—B.A. 5/13—P. Wks Office, Fifth Naval Dist., U. S. Naval Base, Zone 11, elevated water tank at U. S. Naval Base, Craney Island Fuel Facility, Spec. 33667. Plans deposit $10.

† **Va., Norfolk**—OUTSIDE SERVICES—B.A. 5/13—P. Wks. Office, Headquarters, Fifth Naval Dist., U. S. Naval Base, Zone 11, outside services for evaluation building at U. S. Naval Amphibious Base, Little Creek, Spec. 33639. Plans deposit $10.

† **W. Va., South Charleston**—B.A. 5/13—P. Wks. Office Headquarters, Fifth Naval Dist., U. S. Naval Base, Norfolk, 11, Va., resurfacing roads at U. S. Naval Ordnance Plant, Spec. 33226; paving, drainage around Buildings 400, 401 and 401-A U. S. Naval Ordnance Plant, Spec. 33227 Plans deposit $10 each.

† **Fla., West Palm Beach**—AIRFIELD LIGHTING—B.A. On Or About 5/23—U. S. Eng., P. O. Box 4970, Jacksonville, rehabilitation airfield lighting, Palm Beach International Airport, Serial No. Eng 08-123-52-119. Extended date. CD 3/4.

† **N. C., Fort Bragg**—MOTOR POOLS—B.A. About 5/31—U. S. Eng., 308 Customhouse, Wilmington, imprv. motor pools general areas, Serial No Eng 31-075-52-27.

BIDS ASKED—BUILDINGS

Ala., Tuscaloosa—SCHOOL—B.A. 5/20—State Bd. Educ., Montgomery, 503 Dexter Ave., vocational-trade school, $750,000. Extended date. Wilmot C. Douglas, 2922 7 Ave. S., Birmingham, archts. CD 3/18.

▲ **Tenn., Memphis**—WAREHOUSES—B.A. 5/28—U. S. Eng., Box 97, 6 warehouses, $10,000,000. Extended date. CD 4/16.

† **Tenn., Oak Ridge**—HOUSING—B.A. 6/5—U. S. Atomic Energy Comn., P. O. Box E, Oak Ridge, rehabilitation 375 single family T.V.A. type dwelling units, Anderson Co., Inv. No. 401-52-11A. CD 6/20, under LB.

▲ **S. C., Gaffney**—HOUSING—B.A. 6/11—Gaffney Housing Auth., Gaffney, 156 units Housing, Proj. SC 17-1 and SC 17-2. $1,000,000. John J. Harte Co., P. O. Box 2192, Atlanta, Ga., archts. CD 7/10.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Dpt. Wks., City Hall, Richmond, Va., rejected bids Apr. 11, street paving, RICHMOND, VA. LB **$493,719.** CD 4/21, under LB.

▲† **Conn Structors,** Whitehead Bldg., Atlanta, Ga., LB **$1,313,013,** supply office and warehouse and extens. to Bldgs. 77 and 149, at Cherry Point Marine Base, NOY 70638, CHERRY POINT, N. C. P. Wks. Office, Box 365, Naval Base, Charleston, S. C. Bids Apr. 23. CD 3/26.

Nello L. Terr Co., P. O. Box 1131, Durham, N. C. CA. **$733,345,** street paving, DURHAM, N. C. City, Durham, N. C. Bids Apr. 16. CD 4/22.

McDonough Constr. Co., 7 Baltimore Pl. N.W., Atlanta, Ga., LB, **$216,619,** electrical distr. system;

See Bee Constr. Co., Tuscaloosa, Ala., LB, **$517,650,** gas dist. system, at Marine Corps Depot of Supplies, NOY 70666, ALBANY, GA. Dpt. Navy, Officer in Charge of Construction, Box 365, Naval Base, S. C. Bids Apr. 24. CD 3/19.

▲**FLORIDA**—State Hy. Dpt., Tallahassee, Fla.

Duval Eng. & Constr. Co., 1746 E. Adams St., Jacksonville, Fla., CA, **$1,487,278,** grading, paving 3 concrete, steel overpass structures, one culvert drainage structure, State Rds. 10A and 115 U-503 (1), Duval Co. Bids Apr. 17. CD 4/25, under LB.

▲† **R. E. Clarson, Inc.,** 1930 13 Ave., N. St. Petersburg, Fla., CA, **$1,671,100,** engineering bldg., EGLIN AIR FORCE BASE, FLA. U. S. Eng., P. O. Box 1169, Mobile, 7, Ala. Bids Apr. 10. CD 4/23, under LB.

MISSISSIPPI—State Hy. Dpt., **T. C.** Robbins, dir., Jackson,

rejected bids Apr. 22. grade, drain, culverts, bridge 5.216 mi. Miss. Hy. 30 between New Albany and Oxford, FAP No. F 044-1 (5), Lafayette Co. CD 4/11.

▲ **MISSISSIPPI**—State Hy. Dpt., **T. C.** Robbins, dir., Jackson,

Dunn Constr. Co., Inc., 2508 Third Ave. N., Birmingham, Ala. CA **$998,822.** incidental grading, Culverts 25.312 mi. Miss. Rte. 8 between Grenada and Calhoun City, S.P. 8-1524 (6), SP 8-1524 (2), Calhoun and Grenada Counties;

Boyd Constr Co., Grenada, Miss. CA **$96,180.** double bit. surf. tr. 7.336 mi. Miss. Hy. 7 between Greenwood and Holcomb, F 019-1 (1), Lafore and Carroll Counties; CA **$165,235,** drainage, box bridge 4.203 mi. U. S. Hy 11 between Poplarville and Picayune, FI 002-1 (1), Pearl River Co.;

Bowyer & Johnson, Jackson, Tenn. CA **$161,872,** double bit. surf. tr. 13.494 mi. Miss. Hy. 25 between Iuka and Tennessee state line, F 040-2 (4), Tishomingo Co.;

Burdine Constr. Co., Greenville, Miss. CA **$311,759.** drain, culverts, 3.846 mi. Miss. Hy. 8 between Grenada and Calhoun City, SP 8-1524 (4), SP 8-15-24 (5), Calhoun Co.;

Dickerson & Bowen, Brookhaven, Miss. CA **$157,810.** double bit. surf. tr. 18.286 mi. Miss. Hy. 44 between Meadville and Summit, F 046-1 (2), Franklin Co.;

Reed-Meredith Co , Inc., Jackson, Miss. CA **$230,439,** drain, bridge, grav. surf. 5.543 mi. Miss. Hy. 8 between Ruleville and Minter City, F 016-1 (1), Sunflower Co.;

Linwood Smith, Lake Village, Ark. CA **$128,578.** double bit. surf. tr 11.803 mi. Miss. Hy. 25 between Beans Ferry and Smithville, F 281 (6), Itawamba and Monroe Counties;

Gerald Smith Constr. Co., 2965 Third St., Memphis, Tenn. CA **$462,941.** drain, culverts, box bridge 8.754 mi. U. S. Hy. 80 between Bolton and Clinton, FI 004-1 (9), Hinds Co.;

Worsham Brothers, Corinth, Miss. CA **$204,793,** drain, culverts, 7.221 mi. Miss. Hy. 25 between Fairview and Belmont, F 040-2 (5), Itawamba Co. Grand total $2,918,429. Bids Apr. 22. CD 4/11.

LOUISIANA—State Hy. Dpt., Highway Office Bldg., Baton Rouge,

Reynolds & Williams, Box 286, Shreveport, La. CA **$667,136.** patching, wid'n. 14.7 mi. Rustin-Arcadia Hy., State Rte. 4, Lincoln Parish. CD 4/18, under LB.

† **Diehl Pump & Supply Co.,** 800 Fehr St., Louisville, Ky. LB **$92,946,** est. $97,584 augmentation and rehabilitation water supply, FORT KNOX, KY. U. S. Eng., 830 W. Broadway, Louisville, Ky. Bids Apr. 24. CD 4/9.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **John N. Campbell, Inc.,** 6511 Culmore Court, Falls Church, Va., Owner Builds. **$4,200,000.** 300 Cape Cod brick DWELLINGS, northeast intersection of Little River Turnpike and Lee Hy., FALLS CHURCH, VA. Albert D. Leuders, Investment Bldg., Court House Square, Arlington, Va., archt.

Northside Realty Co., Mechanicsville Rte. 2 Cutoff Rd., Richmond, Va. Owner Builds. Approx. **$500,000.** 51 RESIDENCES, RICHMOND, VA.

Russell Cannady, 2014 Winter St., Charlotte, N. C. CA Approx. **$500,000.** 50 RESIDENCES, CHARLOTTE, N. C. Shamrock Gardens, c/o contractor.

▲ **Austin Co.,** 16112 Euclid St., Cleveland, O., CA **$1,250,000.** SERVICE PARTS DEPOT, CHARLOTTE, N. C. Ford Motor Co., 3000 Schaefer St., Dearborn, Mich. CD 4/15.

Corona Investment Co., 224 Palermo Ave., Coral Gables, Fla., Owner Builds. **$400,000,** RESIDENCES in Roberts Terrace, HIALEAH, FLA.

Frank Vellanti, Homestead, Fla., Owner Builds, **$500,000,** 46 RESIDENCES, HOMESTEAD, FLA.

Stobs Bros. Constr. Co., 7010 N. E. 4 Court, Miami, Fla., LB, **$413,434,** Jackson Memorial HOSPITAL addns., MIAMI, FLA. Dade Co., Court House, Miami, Fla. Bids Apr. 22. CD 4/1.

Geo. D. Sheehan, 2130 13 Ave. N., St. Petersburg, Fla., Owner Builds, **$500,000,** 44 RESIDENCES, ST. PETERSBURG, FLA.

Batson-Cook Co., West Point, Ga., LB, **$972,500** STUDENT UNION, AUBURN, ALA. Alabama Polytechnic Institute, Auburn, Ala. Bids Apr. 24.

J. E. Sheppard, 1038 Voorhees St., Jackson, Miss. Owner Builds. **$300,000.** RESIDENCES, JACKSON, MISS.

Subdivision Developers, Inc., 1805 DeSoto St., Shreveport, La. Owner Builds. **$500,000.** RESIDENCES, SHREVEPORT, LA.

Newburg Development Co., Deer Park Ave., Louisville, Ky. Owner Builds. **$300,000.** RESIDENCES, LOUISVILLE, **KY.**

Traylor Bros., Inc., Upper Mt. Vernon Rd., Evansville, Ind. CA **$300,000.** rein.-con., masonry WAREHOUSE, LOUISVILLE, KY. South Dixie Warehouse Co., Inc., 646 W. Hill St., Louisville, Ky. CD 1/28.

MIDDLE WEST

BIDS ASKED—BUILDINGS

Ill., **Aledo**—SCHOOL—B.A. 5/15—School Dist. 201, Aledo, high school, $750,000. Wm. F. Bernbrock & Assoc., 830 5 Ave., Moline, archt. CD 2/16/45.

O., **Boardman (Br. Youngstown)**—SCHOOL—B.A. 5/15—Bd. Educ. Boardman School Dist., 7410 Market St., Youngstown, Zone 12, school. Plans deposit $25. Kling & Frost, 661 Wick Ave., Youngstown, archts. CD 1/25/51.

SOON LETS CONTRACT—BUILDINGS

Ill., **Chicago**—FACTORY—Breyer Molding Co., 2536 W. Lake St., Zone 12, soon lets contract 2 story factory addn. $90,000. Laramore & Douglas, 79 E. Adams St., Zone 3, engrs.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

▲ **Arcole Midwest Corp.**, 3225 Main St., Evanston, Ill., LB, **$121,745,** Skokie to Ridge Rds., Dundee Rd. from Forest Way to Vernon St. and Dempster St. from Georgiana to Central Ave.; LB, **$154,182,** Touhy Ave. from Cicero Ave. to Ridge Blvd.; LB, **$124,458,** resurf. Westchester Blvd. grade separation for Congress Highway; LB, **$104,408,** resurfacing Devon Ave. from Canfield to Caldwell Sts.;

Rock Road Constr. Co., 5915 N. Rogers St., Chicago, 26, Ill., LB, **$126,602,** 87 St. from Eggleston Ave. to Stony Island Parkway; LB, **$174,395,** resurf. Central Ave. from Lawrence to Milwaukee Sts., Gunnison St. from Nagle to Austin Aves., Montrose Ave. from Central to Milwaukee Sts., Narragansett Ave. and Nagle Ave. from Irving Park Rd. to Northwest Highway; LB, **$186,380,** paving, California Ave. from 26 to Roosevelt St., Central Ave. from North Ave. to Fullerton St., Orleans St. and Division St. from Kinzie to Clybourn Sts., 47 St. from Kedzie to Western Sts.;

Standard Paving Co., 30 N. La Salle St., Chicago, 2, Ill., LB, **$132,956,** resurfacing 1 Ave. from Ogden Ave. to Roosevelt Rd., LB, **$198,451,** resurfacing Neenah Park Rd. from Irving Park Rd. to Pulaski St.;

American Asphalt Paving Co., 12 S. La Salle St., Chicago, 3, Ill., LB, **$170,316** resurfacing 70 St. from Western St. to Damen Ave., 76 St. from Damen Ave. to Vincennes St., 76 St. from St. Lawrence St. to Stoney Island Ave.; LB, **$117,943,** resurfacing Brainerd Ave. from Torrence Ave. to Indiana state line;

Union Contg. & Eng. Co., 30 N. La Salle St., Chicago, 2, Ill., LB, **$157,689,** resurfacing Morgan St. from 87 to 63 Sts., 87 St. from B. & O. C. T. R. R. to Damen St., LB, **$215,993,** resurfacing 103 St. from Western Ave. to Racine St., Vincennes and Berkeley Aves. from 127 to 95 Sts.;

W. L. Sheppard Co., 1412 Altgeld St., Chicago, 14, Ill., **LB, $460,359,** Feeder Route (Ontario St.) to Northwest Highway from Orleans St. to Michigan Blvd.;

Crowley-Sheppard Asphalt Co., 12 Broadview St., Maywood, Ill., LB, **$168,985,** resurfacing 127 St. from Calumet Sag Rd. to State St.;

H. G. Goelitz Co., 5757 Ogden Ave., Cicero, Ill., LB, **$142,980,** resurfacing 26 St. from Cicero to Harlem Aves.;

Gallagher Asphalt Co., Thornton, Ill., LB, **$117,095,** Dolton Ave. from Greenwood Ave. to Indiana state line;

J. M. Corbett Co., 2501 S. Salt St., Chicago, 8, Ill., LB, **$135,410,** resurfacing Pulaski Rd. from 87 to 75 Sts., Marquette Rd. from Pulaski Rd. to California Ave., CHICAGO, ILL. Cook Co., County Bldg., Chicago, Ill. CD 12/3.

Wadeford Electric Co., 205 W. Wacker Dr., Chicago, Ill, CA, **$183,338,** electrical distr. system, Dixon State Hospital, DIXON, ILL. State Div. Architecture, P. Wks. Bldg., Springfield, Ill. CD 4/9/45, under Public Buildings.

Markus-Thomsen, Kenosha, Wis., LB, **$284,268,** storm sewerage sys., KENOSHA, WIS. City, Kenosha, Wis. R. M. Smith, city engr. Bids Apr. 18.

Kriegoff-Lenawee Co., Adrian, Mich. LB **$69,448.** 1 m.g. clear water reservoir at filtration plant, underground, ADRIAN, MICH. City, Water Bd., Adrian, Mich. Bids Apr. 18. CD 4/1.

BUILDINGS

LOW BIDS AND CONTRACTS

3333 Euclid Apartments Co., James L. Watson, treas., 1236 Manor Park, Lakewood 7, O. Owner Builds. Approx. **$700,000.** 94 unit MOTEL, CLEVELAND, O. CD 4/24.

Main-Nottingham Investment Corp., c/o Geyer & Neuffer, archts., 30 S. Ludlow St., Dayton, O. Owner Builds. **$300,000.** Northtown SHOPPING CENTER addn. to contain approx. 28,000 sq. ft. floor space, DAYTON, O.

W. A. Sheets Constr. Co., 1057 Osage St., Fort Wayne, Ind. CA **$610,000.** 25x280 ft. FACTORY addn. to house dept. for reclaiming molder's sand, DEFIANCE, O. Central Foundry Div. General Motors Corp., Defiance, O. Awarded Apr. 21.

▲ **Gallenstein Brothers,** 6901 Madison Pl., Madeira, O. Own Forces. **$4,050,000.** 225 one-family 34x28 ft. to 28x40-ft. brick, frame HOMES, Locust Lane, Juler Ave., Dee St., Miami and Tances Aves., MADEIRA, O. Nunlist & Frolicher, Traction Bldg., Cincinnati, O., engrs. Awarded Apr. 24.

▲ **S. N. Nielson Co.,** 3059 W. Augusta St., Chicago, Ill., CA **$1,300,000,** 1 story, irregular, brick, rein.-con., structural steel mfg. PLANT addn., GARY, IND. Budd Co., E. F. Bates, plant mgr., 700 Chase St.,

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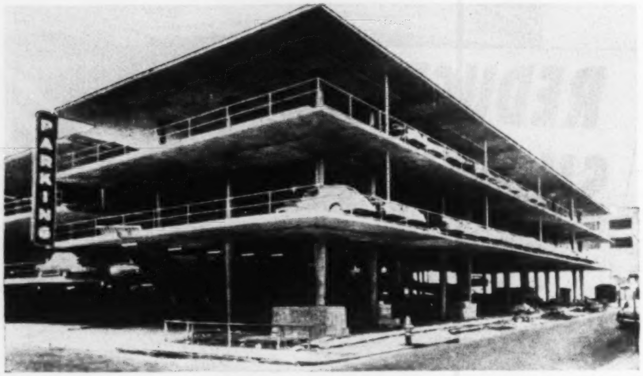

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Gary, Ind. Giffels & Valet, 1000 Marquette Bldg., Detroit, Mich., engrs. Awarded Apr. 21.

Thorgerson & Erickson, 228 N. La Salle St., Chicago, 1, Ill., CA, **$750,000,** ENGINEERING bldg. on Hammond Works premises, HAMMOND, IND. American Steel Foundries, 410 N. Michigan Ave., Chicago, 11, Ill. Bids Apr. 9, awarded Apr. 21. CD 4/9.

Leslie Ullrich, Mundelein, Ill., CA **$875,000** HIGH SCHOOL addn., driveways and parking areas, LAKE ZURICH, ILL. School Dist. 125, Lake Zurich, Ill. Awarded Apr. 17. CD 4/15, under LB.

▲ **Walter Butler Constr. Co.,** Minnesota Bldg., Minneapolis, Minn., CA, **$1,725,000,** 4 story, 40x200 ft., and 40x75 ft. HOSPITAL and CHAPEL addn., SOUTH BEND, IND. St. Mary Convent, South Bend, Ind.

Poirot Constr. Co., 2001 Pershing Rd., Chicago, 9, Ill., CA, Approx. **$500,000,** 280x300 ft. WAREHOUSE addn., CHICAGO, ILL. Kentile, Inc., 4532 S. Kolin St., Chicago, 32, Ill. A. Epstein & Assocs., 2011 Pershing Rd., Chicago, 9, Ill., archts. Awarded Apr. 10.

Kimball Hill & Assocs., 575 Lee St., Des Plaines, Ill. Owner Builds, **$700,000,** 50 HOMES along Chase and Scott Sts., DES PLAINES, ILL. Awarded Apr. 21. CD 3/12/51.

▲ **Contractors & Builders, Inc.,** 228 N. La Salle St., Chicago, 1, Ill. Owner Builds, **$3,500,000,** 400 HOMES, ELMHURST, ILL. A. J. Del Bianco, 5501 W. Irving Park Blvd., Chicago, Ill., archts. Awarded Apr. 17.

▲ **Chesterfield Builders,** 3454 Devon St., Lincolnwood, Ill. Owner Builds, **$2,000,000,** 100 RESIDENCES, water and sewer lines, GLENVIEW, ILL. A. Hydzik, 4901 Parker St., Chicago, 49, Ill., archt.

▲ **Irving Blietz,** 8905 Prairie St., Skokie, Ill. Owner Builds, **$1,150,000,** 60 RESIDENCES, along Winnetkad and Hibbard Rds., WILMETTE, ILL.

Gehl Lumber Co., 3718 W. Lancaster Ave., Milwaukee, 9, Wis. Owner Builds 1 story, 85x200 ft., concrete block box FACTORY, MILWAUKEE, WIS. F. J. Holdampf, 7439 N. Boyd Way, Milwaukee Wis., archt.

WEST OF MISSISSIPPI

BIDS ASKED—HEAVY CONSTRUCTION

† **Kansas**—RAILROAD RELOCATION—B.A. 5/20—U. S. Eng., P.O. Box 61, Tulsa, Oka., relocation Rock Island tracks at Valley Center. $100,000.

BIDS ASKED—BUILDINGS

Neb., Minden—HOSPITAL—B.A. 5/15—Kearney Co., Minden, hospital. $300,000. G. B. Bouton, Tribune Bldg., Hastings, archt. CD 4/24/51.

Ark., Benton—HOUSING—B.A. 5/16—Benton School Dist. 8, Benton, school, $450,000. Plans deposit $50. D. F. Stowers, Commercial National Bank Bldg., Little Rock, archt. CD 1/4.

† **N. M., Albuquerque**—GUARD HOUSE—B.A. 5/22—U. S. Eng., Box 1538, remodeling guard house, 2 guard towers, Sandia Base (50, 51-MCA-NME, D-1 Item 13), Eng. 29-005-52-45. Plans deposit $75. CD 4/15, under LB.

Tex., Amarillo—Y.M.C.A. BLDG.—Bids Asked—Young Mens Christian Assn., Amarillo, Y.M.C.A. bldg. $650,000. Walsh & Hazelwood, Paramount Bldg., archts. CD 4/16.

Tex., Forth Worth—EDUCATIONAL—Bids Asked—Fort Worth Baptist Church Congregation, c/o Easterwood & Easterwood, archts., 521 Neil P. Anderson Bldg., 3 story, 100x126 ft. educational bldg. $450,000. CD 1/23.

SOON LETS CONTRACT—BUILDINGS

Tex., Houston—STORE—S. H. Kress & Co., W. F. Holmes, Constr. Div., 114 Fifth Ave., New York, N. Y., soon lets contract. 1 and 2 story, bsmnt, mezzanine mercantile store, Main St. at Congress Ave. $550,000. Russ Bath, Box 1414, archt. Rob. J. Cummins, 1208 Bankers Mortgage Bldg., engr. CD 1/9.

Tex., San Antonio—DOMITORY—St. Marys University, Cincinnati Ave., soon lets contract 3 story, dormitory, $400,000. Julian & White, 2901 Transit Tower Bldg., archts. J. W. Bretta, Engineers, Inc., 9-2 Travis Bldg., engr. CD 1/30.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

† **T. D. Gustafson Co.,** 3206 Bloomington Ave., Minneapolis 7, Minn. CA **$105,429.** exten. utility system, Naval Air Station, MINNEAPOLIS, MINN. Ninth Naval Dist., Great Lakes, Ill.

IOWA—State Hy. Comm., Ames,
P K. Duvall Inc., Logan, Ia., LB, **$147,198,** bridges, culverts FN-214, Harrison Co.;
Schmidt Constr. Co., Winfield, Ia., LB, **$123,138,** bridge, culverts S-2143 (1), Linn Co., Bids Apr. 22. CD 4/10.

IOWA—State Hy. Comm., Ames,
Central Constr. Co., Indianola, Ia., LB, **$98,967** paving 0.592 mi. P 1017B, Pottawattamie Co.;
E. M. Duesenberg, Inc., Clear Lake, Ia., LB, **$87,932** grading 7.677 mi. S-1958 (1), Allamakee Co.;
Ralph Green & W. L. Groesbeck, 312 Masonic Temple Bldg., Des Moines, Ia., LB, **$231,396,** grading 12.569 mi. F-200 (5), Black Hawk Co.;
Mott Constr. Co., Centervile, Ia., LB, **$61,655,** grading 6.231 mi. SN-1327, Monroe Co. Bids Apr. 22. CD 4/10.

Chambers Constr. Co., 621 Trust Bldg., Lincoln, Neb., CA **$67,500,** sewers, sewage plant, GRETNA, NEB. City, Gretna, Neb. Bids Apr. 21. CD 4/1.

† **McWilliams Dredging Co.**, Box 584, New Orleans, La. LB **$138,657.** Unit 1, dredging Gulf Intracoastal Waterway between Galveston and Vicinity, Bastrop Bayou, CIVENG 41-243-52-76, Galveston and Brazoria Counties, TEXAS. U. S. Eng., 606 Santa Fe Bldg., Galveston, Tex. Bids Apr. 22. CD 4/4.

Central Telephone Co-operative, A. R. Grote, Brady, Tex. Owner Builds. **$125,000,** units of rural pole telephone lines, Brady; **$85,000,** addnl. pole rural telephone lines, Brownwood; **$75,000,** addnl. units of rural telephone lines, San Saba; **$70,000,** addnl. unit of rural pole telephone lines, Goldthwaite, TEXAS. Grand total $255,000. CD 12/5.

City, Bay City, Tex. Purchase and Hire. **$75,000.** street asph. paving, BAY CITY, TEX. CD 10/10/51.

City, Bonham, Tex. Purchase and Hire. **$60,000.** sewage disposal unit, BONHAM, TEX. Hicks, Wisenbaker, Fix & Assoc., Tyler, Tex., engrs. CD 2/16/51.

City, Burkburnett, Tex. Purchase and Hire. **$40,000.** doubling capacity of WW, BURKBURNETT, TEX.

City, Jacksonville, Tex. Owner Builds. **$40,000,** underground water supply, JACKSONVILLE, TEX. CD 11/28/50.

† **U. S. Eng.**, 606 Santa Fe Bldg., Galveston, Tex. cancelled bids to have been opened Apr. 24, Auxiliary Airfield No. 1, 12 mi. south of Aguilares, 28 mi. east of Laredo, Laredo Air Force Base, Eng. 41-243-52-84, LAREDO, TEX. CD 3/26.

† **Ricks Constr. Co. & Maufrais Constr. Co., Inc.**, P.O. Box 3131, Austin, Tex., LB **$672,117**, Lot 4, bachelor offices quarters bldg. at Laredo Air Force Base, Inv. No. Eng 41-243-52--89, LAREDO, TEX. U. S. Eng., 606 Santa Fe Bldg., Galveston. Bids Apr. 22. CD 4/2.

† **McInnis & George**, Hutton Bldg., Spokane, Wash. CA, **$713,713,** warehouse, Great Falls Air Force Base, Eng. 45-164-52-23, GREAT FALLS, MONT. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids Apr. 15, awarded Apr. 18. CD 4/23.

COLORADO—State Hy. Dpt., Denver.

Colorado Constructors, Inc., 725 W. 39 St., Denver, Cala., LB, **$613,383,** est. $563,226, grading, stabilization, structures, surf., road mix oil surfacing, 1.24 mi. State Hy. 141, Uravan and Naturita, Montrose Co. Bids Apr. 24. CD 4/18.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Weitz Constr. Co.,** Fleming Bldg., Des Moines, Ia., CA, **$1,360,000,** general contract, Women's DORMITORY, DES MOINES, IA. Drake University, 25 and University Sts., Des Moines, Ia. Bids Mar. 18. CD 4/21/49.

▲ **C. Rallo Contg. Co., Inc.,** 5000 Kemper Park, St. Louis 9, Mo. CA, total est. **$3,000,000,** general contract. 1, 2 and 4 story, brick, rein.-con., steel Bishop DeBourg High SCHOOL, incl. gymnasium-cafeteria bldg., convent on Eichelberger St. between Hampton and Clifton Aves., ST. LOUIS, MO. St. Louis Archdiocese of Catholic Church, c/o Most Rev. Joseph E. Ritter, archbishop, 3810 Lindell Blvd., St. Louis 8, Mo. Bids Apr. 16, awarded Apr. 25. CD 3/25.

▲ **Huddleston-Seamon Co.,** Kingsville, Tex., LB **$1,024,000,** est. $945,000, construct, manage, finance 129 unit Wherry HOUSING, Sol Spigel Village, FHA Proj. No. 112-80004-Navy-1, DALLAS, TEX. U. S. Govt., c/o Dist. P. Wks. Officer, Eighth Naval Dist., Bldg. 16, New Orleans, 12, La. Bids Apr. 22. CD 3/17.

E. E. Farrow, 6109 Forest Park Rd., Dallas, Tex., CA approx. **$541,000,** PLANT addn., DALLAS, TEX. Diamond Alkali Co., Box 6140, Dallas, Tex. CD 4/21.

McCann Constr. Co., Box 2079, Fort Worth, Tex., CA **$714,784,** general constr. 3-unit RELIGIOUS bldgs., FORT WORTH, TEX. Texas Christian University, TCU Campus, Fort Worth, Tex. Bids Apr. 2. CD 4/9, under LB.

McGregor Investment Co., c/o Earl A. Gregg and Overbrook Corp., 5308 Carrolton St., Houston, Tex. Owner Builds. **$365,000.** Proj. 2, 50 DWELLINGS, Overbrook addn., HOUSTON, TEX. CD 1/4.

G. W. Mitchell, 811 American Hospital & Life Bldg., San Antonio, Tex. CA **$850,000.** 3 story, bsmnt., 50x608 sq. ft., brick, steel EDUCATIONAL BLDG., SAN ANTONIO, TEX. First Baptist Church Congregation, Taylor and Fifth Sts., San Antonio, Tex. CD 6/25/51.

FAR WEST

BIDS ASKED—HEAVY CONSTRUCTION

† **Nev. Reno**—ADMINISTRATION BLDG., etc.—B.A. 5115—U. S. Eng., 180 New Montgomery St., San Francisco, administration bldg, housing, etc, at Stead Air Force Base, Eng 04-203-52-57. CD 6/27.

† **California**—B.A. 5/22—Bureau Reclamation, Dpt. Interior, Tracy, earthwork, concrete pipe line and structures for lateral 25.6 Contra Costa Canal distribution system, Central Valley Proj., near Port Chicago. Spec. DC 3711., adv ENR 5/8.

BIDS ASKED—BUILDINGS

▲ **Ore., Portland**—TEACHING HOSPITAL—B.A. 5/16—State Bd. Higher Educ., Eugene, 14 story, steel, frame teaching hospital, University of Oregon Medical School. $6,000,000. Lawrence, Tucker & Wallmann, Failing Bldg., archts.

SOON LETS CONTRACT—BUILDINGS

▲ **Calif., Fort Ord**—Public Housing Admin., 180 New Montgomery St., San Francisco, soon lets contract, 120 unit housing, $1,000,000.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Rex F. Moss Constr. Co., 1981 Siguard Dr., Salt Lake City, Utah, CA, **$280,910,** curb and gutter in Curb & Gutter Extension No. 110-3, SALT LAKE CITY, UTAH. Salt Lake City Corp., City and County Bldg., Salt Lake City, Utah. Bids Apr. 8. CD 3/24.

ARIZONA—State Hy. Dpt., 17 Ave. and Jackson St., Phoenix,

Wallace & Wallace, Box 470, Phoenix, Ariz., LB, **$197,340,** subgrade, select material, aggregate base, bit. road mix 3.8 mi. Show Low-Springerville Highway, Navajo Co.

J. & J. Constr. Co., 1801 Petroleum Bldg., Oklahoma City, Okla., CA, **$91,120,** 37.5 mi. of 14.4 and 24.9 kv. rural dist. line, Pima Co., ARIZONA. Trico Electric Co-operative, 3800 Oracle Rd., Tucson, Ariz. J. V. Swain, c/o owner, engr.

▲ **WASHINGTON**—State Hy. Dpt., Olympia,

Guy F. Atkinson Co., Skinner Bldg., Seattle, 1, Wash., CA, **$1,192,822,** steel girder, bridge and rein.-con. approaches over Ebey Slough on State Hy. 1, Snohomish Co.

U. S. Steel Co., 525 William Penn Pl., Pittsburgh, Pa., CA, **$3,073,376,** steel superstructure for bridge over Columbia River at Pasco, Benton and Franklin Counties. Bids Apr. 22. CD 3/26.

▲ **WASHINGTON**—State Hy. Dpt., Olympia,

Diesel Oil Sales Co., 2155 Northlake Ave., Seattle, 3, Wash., CA, **$158,564,** bit. penetration macad. 4.9 mi. Hy. 12, K-M. mountain easterly, Wahkiakum Co.; CA **$105,115,** non-skid single seal tr. and bit. penetration macad. 32.67 mi. Hys. 1 and 5, Nugents bridge to Deming et al, Whatcom and King Counties;

Associated Sand & Gravel Co., Everett, Wash., CA **$104,213,** b. conc. 2.475 mi. Highway 1 and 1-W Richmond Heights to Everett and in Edmonds, King and Snohomish Counties;

McAtee & Heath, E 3537 Trent St., Spokane, Wash., CA **$76,012,** b. conc., storm sewers, 0.66 mi. Hy. 18 Broadway Ave. in Moses Lake, Grant Co. Grand total $443,904. Bids Apr. 22. CD 4/8.

† **U. S. Eng.,** 4735 E. Marginal Way, Seattle, 4, Wash., cancelled bids to have been opened Apr. 29 wing operations and squadron operations bldgs. McChord Air Force Base, Eng 44-108-52-195, TACOMA, WASH. CD 4/2.

OREGON—State Hy. Comn., Highway Bldg., Salem,

E. C. Hall, 12012 S.W. Barbur St., Portland, Ore. CA, **$375,501.** paving 2.65 mi. Tigard-Newbert, Pacific Hy. west, FAP F 73 (10), Washington Co.;

Warren Northwest, Box 5072, Portland, Ore. CA, **$207,386.** paving 6.26 mi. Hillsboro-Silverton Hy., FAP S 227 (2), Marion Co. Bids Apr. 22. R. H. Baldock, hy. engr.

† **Valley Iron Works,** 111 S. Front St., Yakima, Wash. CA **$528,260,** trash racks, lifting beam, McNary Dam CIVENG 45-164-52-86, OREGON. U. S. Eng., City-County Airport, Walla Walla, Wash. Bids Apr. 17. CD 4/23, under LB.

† **OREGON**—Bureau P. Rds., Dpt. Commerce, Morgan Bldg., Portland,

J. G. Watts Constr. Co., 4538 S.W. Macadam St., Portland, Ore. CA, **$454,506.** grading 4.304 mi. North Umpqua Hy., Douglas Co. Bids Apr. 15. CD 4/2.

OREGON—State Hy. Comn., Highway Bldg., Salem,

C. R. O'Neill, Cresswell, Ore. LB, **$697,645.** grading, paving 4.39 mi. Oregon Coast Hy., BF 141 (13), Coos Co.;

rejected bid Apr. 21, rock production on Wallowa Lake and Weston-Elgin Hys., Union Co.;

received no bids Apr. 21, rock production on John Day Hy., Gilliam and Wheeler Counties. CD 5/4/45.

OREGON—State Hy. Comn., Highway Bldg., Salem,

O. C. Yocum Co., Box 566, Pacific Hy. N., McMinnville, Ore. CA, **$429,005.** grading 17.55 mi. oil material surf. 20.98 mi. Heppner Hy., S 125 (1), Morrow and Umatilla Counties;

Babler & Rogers, 4617 S.E. Milwaukie St., Portland, Ore. CA, **$135,576.** grading 2.97 mi., paving 3.32 mi. S 126 (1) and S 127 (1), Malheur Co. Bids Apr. 21. CD 5/4/45.

Thomas C. Wildish, Pacific Hy. S, Eugene, Ore. CA, **$114,661.** street paving, SPRINGFIELD, ORE. City, City Hall, Springfield, Ore. Dean E. Hodges, city engr. Awarded Apr. 21.

▲† **ABC Constr. Co. & R. J. Daum,** 14346 S. Lakewood Blvd., Paramount, Calif., CA, **$1,471,450,** pipe lines, structures, South Coast Conduit, Carpenteria, Section, Cachuma Proj. Spec. DC 3666, CALIFORNIA. Bureau Reclamation, Dpt. Interior, Goleta, Calif. Bids Apr. 9, awarded Apr. 22. CD 4/17, under LB.

† **H. Earl Parker, Inc.,** 12 and F Sts., Marysville, Calif., LB, **$342,708,** levee setbacks and bank protection at 4 sites along left and right banks of Sacramento River near Knights Landing, Spec. 1588, CALIFORNIA. U. S. Eng., Wright Bldg., Sacramento. Bids Apr. 8. CD 3/26.

† **Heringer & Co.,** P. O. Box 461, Rio Vista, Calif., LB, **$205,699** levee enlargement and bank protection, South Levee Lindsey Slough from junction with Cache Slough, 4 mi. upstream near Rio Vista, Spec. 1633, CALIFORNIA. U. S. Eng., Wright Bldg., Sacramento, Calif. Bids Apr. 17. CD 4/11.

† **Lowe & Watson,** 1148 S. "E" St., San Bernardino, Calif., LB, **$137,538,** repair and paving roads, on ranges and FH area, NOY 71912, Spec. 33313, INYOKERN, CALIF. Naval Ordnance Test Station, Inyokern, Calif. Bids Apr. 17. CD 4/8.

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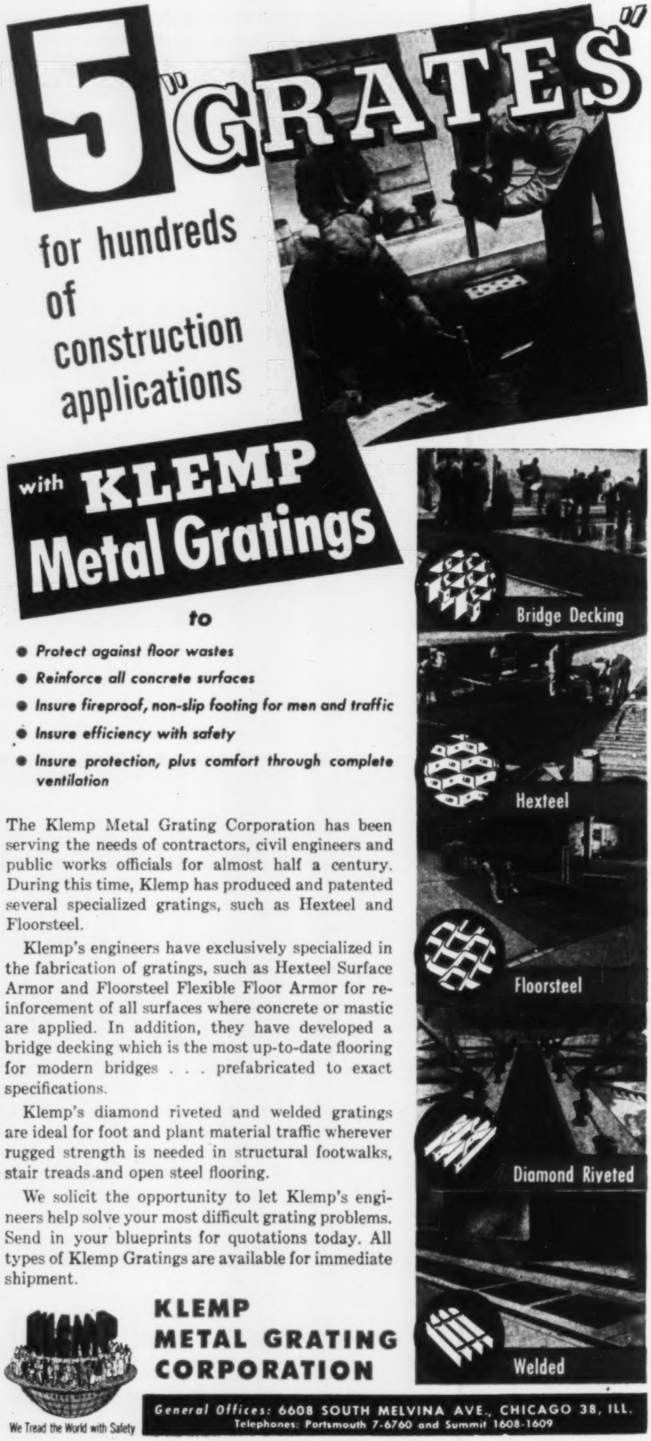

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† **J. H. Pomeroy**, 333 Montgomery St., San Francisco, Calif., LB, **$719,323**, extension to portal crane tracks, etc. at Mare Island Naval Shipyard, NOY 28947, Spec. 30551, MARE ISLAND, CALIF. Twelfth Naval Dist., San Bruno, Calif. Bids Apr. 23. CD 3/26.

▲† **Haddock Engineers Ltd.**, 1616 S. Greenwood St., Montebello, Calif., CA, **$1,062,573,**, central heating plant and steam distr. system at Naval Air Station, MIRAMAR, CALIF. Dpt. Navy, Eleventh Naval Dist., San Diego, Calif. Bids Mar. 20. CD 3/28, under LB.

† **Peter Kiewit Sons Co.**, 345 Kieways, Arcadia, Calif., CA, **$580,582**, taxiways, alert and maintenance aprons etc., Spec. 1608, TRAVIS AIR FORCE BASE, CALIF. U. S. Eng., Wright Bldg., Sacramento, Calif. Bids Apr. 16, awarded Apr. 23. CD 4/22, under LB.

BUILDINGS

LOW BIDS AND CONTRACTS

† **Dinwiddie Constr. Co.**, Crocker Bldg., San Francisco, Calif., LB, **$539,819**, 11 inert STOREHOUSES, Naval Ammunition Depot, NOY 71221, Spec. 30560, at HAWTHORNE, NEV. P. Wks. Office, Twelfth Naval Dist., San Bruno, Calif. Bids Apr. 23. CD 4/3.

▲ **Lewis Constr. Co.**, 308 Lowman Bldg., Seattle, 4, Wash., CA, approx. **$3,000,000**, 300 HOUSING units, two and 3 units in each frame bldg. at View Crest, BREMERTON, WASH. View Crest Garden Apartments, Inc., 308 Lowman Bldg., Seattle, 4, Wash. E. W. Morrison, 719 2 Ave., Seattle, 4, Wash. CD 4/15.

John H. Sellen Constr. Co., 228 9 Ave. N., Seattle, Wash., CA, **$200,000**, 116x228 ft., steel, masonry Bottling PLANT, Mallon Ave. and Monroe St., SPOKANE, WASH. Coca Cola Bottling Co., N 1226 Division St., Spokane, Wash.

▲† **Maxwell Gibbs Co. & Assocs.**, 1298 South La Brea Ave., Los Angeles, Calif., LB, **$3,589,080**, DORMITORIES, MESS and ADMINISTRATION BLDGS., Spec. 1602, CAMP BEALE, CALIF. U. S. Eng., Wright Bldg., Sacramento, Calif. Bids Apr. 18.

Swinerton & Walbert Co., 225 Bush St., San Francisco, Calif., LB, **$319,800**, PHYSICAL EDUCATION and LOCKER ROOM BLDG. for Gustine High School, GUSTINE, CALIF. Gustine Union High School Dist., P. O. Box 486, Gustine, Calif. Bids Apr. 17. CD 4/3.

E & T Constr. Co., 7601 Crenshaw Blvd., Los Angeles, Calif. LB, **$457,400**, 168 St. SCHOOL, LAWNDALE, CALIF. Lawndale School Dist., 4110 W. 154 St., Lawndale, Calif. Bids Apr. 17. CD 4/3.

L. C. Havstad, Box 648 Loma Linda, Calif., CA, **$300,000** 2 story, rein.-con. LIBRARY-ADMINISTRATION BLDG., LOMA LINDA, CALIF. College of Medical Evangelists, 312 N. Boyle St., Los Angeles, Calif. E. T. Heltschmidt, 449 S. Beaudry St., Los Angeles, Calif., archt.

▲ **Johnson Western Constructors**, 2100 Wilmington-San Pedro Rd., San Pedro, Calif., CA, **$1,073,148**, tilt-up rein.-con. WAREHOUSE, LONG BRANCH, CALIF. Long Beach Harbor Dpt., 1333 E. Embarkadero St., Long Beach, Calif. Bids Apr. 10, awarded Apr. 17. CD 4/22, under LB.

Oppenheim & King Constr. Co., Inc., 1120 Parallel St., Fresno, Calif., LB, **$925,529**, Washington Elementary, McCabe Junior Elementary, and McCabe Senior Elementary SCHOOLS, MENDOTA, CALIF. Mendota Union School Dist., Mendota, Calif. Bids Apr. 16. CD 3/24.

▲ **Cahill Constr. Co., Inc.**, 206 Sansome St., San Francisco, Calif., LB, **$1,597,654**, general contract; **Herman Lawson Co.**, 465 Tehama St., San Francisco, Calif., LB, **$576,369**, mechanical work for CLASSROOM and LIBRARY bldg. for City College, SAN FRANCISCO, CALIF. Dpt. P. Wks., City Hall, San Francisco, Calif. Bids Apr. 23. CD 3/31.

U. S. POSSESSIONS

BIDS ASKED—HEAVY CONSTRUCTION

† **Puerto Rico, Aguadilla**—POWER FACILITIES—B.A. On Or About 5/27—U. S. Eng., P.O. Box 4970, Jacksonville 1, Fla., expansion power facilities, Ramey Air Force Base, Inv. No. Eng. 08-123-120. Bids Mar. 28, rejected, LB **$216,811.** CD 4/10, under LB.

Puerto Rico—B.A. 6/2—Puerto Rico Transportation Auth., at office of Salvador V. Caro, genl. mgr., Bldg. 53, Isla Grande Airport, San Juan, dredging an Industrial Channel in San Juan Harbor; adv. ENR 5/8. Plans deposit $25.

CANADA

BIDS ASKED—HEAVY CONSTRUCTION

Alta., Penhold—HEADQUARTERS—B.A. 5/13—Govt. of Canada, Dpt. National Defence AIR, Cartier Sq., Ottawa, Ont., headquarters bldg. Plans deposit $199. W. J. Milhausen 400 Kensington Bldg., Winnipeg, Man., engr

Alta., Penhold—HOSPITAL—B.A. 5/13—Govt. of Canada, Dpt National Defence Air, Cartier Sq., Ottawa, Ont. 50 bed hospital. Plans deposit $100. Bids 3/25 rejected. Defence Constr. (1951) Ltd., 400 Kensington Bldg., Winnipeg, Man., engr. CD 3/10.

Ont., Centralia—TRANSMITTER BLDG—B. A. 5/13—R. P. Opie, engr. Defence Constr. Ltd., 441 Queen's Quay W., Toronto, 2 B, Ont., unit transmitter bldg. Scheme "B" Class II as R.C.A.F. Station, Job 1950. Plans deposit $100.

HEAVY CONSTRUCTION

LOW BIDS AND CONTRACTS

Alexander Constr. Ltd., 10436 81 Ave., Edmonton, Alta, CA, Approx **$800,000**, two messes at R.C.A.F. Station, JOB 1833, PINEHOLD, ALTA. Defence Constr. Ltd., 400 Kensington Bldg., Winnipeg, **Man.** Bids Mar. 11. CD 2/25.

James Morrison Brass Mfg. Co. Ltd., 276 King St. W., Toronto, Ont., CA, **$400,000** underground steam distr. system at R.C.A.F. Station, RIVERS, MAN. Defence Constr. Ltd, 400 Kensington Bldg., Winnipeg, man. W. J. Milhausen, c/o owner, engr.

James Morrison Brass Mfg. Co. Ltd., 276 King St. W. Toronto, Ont., Approx. **$400,000**, underground steam distr. system at R.C.A.F. Station, WINNIPEG, MAN. Defence Constr. Ltd., 300 Kensington Ave., Winnipeg, Man. W. P. Milhausen, c/o owner, engr.

David Tessier, 48 Duplessis Blvd., Cap de la Madeleine, Que., CA, **$60,000**, water main extensions, CAP DE LA MADELINE, QUE. Municipality, Cap de la Madeline, Que. L. Lupien, City Hall, city mgr.

BUILDINGS

LOW BIDS AND CONTRACTS

▲ **Canadian Betchel Ltd.**, 425 Howe St., Vancouver, B. C., CA, Approx. **$13,500,000**, major portion of expansion project at Ioco REFINERY at Burrard Inlet, 15 mi. from VANCOUVER, B. C. Imperial Oil Ltd., 234 Smith St., Vancouver, B. C. CD 11/29.

A. Battaglia & Son, 127 Ferguson St., Guelph, Ont., CA, **$325,000**, 1 story 156x275 ft., brick, concrete High SCHOOL, KINGSVILLE, ONT. Kingsville District High School Bd., Kingsville, Ont. Bids Mar. 26, awarded Apr. 22. CD 3/10.

Ray James Constr. Co. Ltd., 609 William St., London, Ont., CA, Approx. **$125,000**, 1 story 61x293 ft. with 26 ft. ceiling, WAREHOUSE, LONDON, ONT. Clatworthy Lumber Co. Ltd., Glasgow St., London, Ont. Bids Apr. 14. CD 4/4.

Alfred Sauve, Briarfield Ave., Sarnia, Ont., CA, Approx. **$750,000**, 55 one and half story, brick frame HOMES, Briarfield Ave., SARNIA, ONT. Grandview Park Housing Project, E. M. Levesque, mgr., Christian St., Sarnia, Ont. Awarded Apr. 23.

E. Brunet & Son, 9 Dumas St., Hull, Que., CA, **$574,000** 2 story, rein.-con. brick, high SCHOOL, Murray St., HULL, QUE. Protestant Trustees, 45 Principale St., Hull, Que. Bids Apr. 17. CD 4/2.

Proposed Projects

WATER SUPPLY

Calif., Walnut Creek—California Water Service Co., Concord, water filtration plant about 2 mi. north of here, **$600,000.**

Minn., Albert Lea—City and Manager, WW imprvs., incl. mains, feeders, elevated tank and surf. reservoir, **$950,000,** Banister Eng. Co., 1449 University Ave., St. Paul, consult. engr.

Minn., St. Paul Park—Village, F. S. Goth, clk., defeated **$390,000** bonds Apr. 15, water extensions. CD 3/13.

▲ **Okla., McAlester**—City, defeated bonds Apr. 15, WW extens. **$1,000,000.** W. R. Holway, 302 E. 18 St., Tulsa, consult. engr. CD 3/5.

Tex., Austin—Travis County Water Control & Imprvt. Dist. 4, Court House, voted bonds Apr. 19, water distr. sys., **$155,000**; imprvs., rehabilitation existing WW, **$40,000.** The Marvin Turner Engineers, Nalle Bldg. Annex, Austin, consult. engrs. CD 4/7.

Tex., Edgewood—Town, water main, **$35,000**; filter plant unit, **$35,000**; earthen lake for domestic water supply, **$90,000.** CD 10/29.

Tex., Houston—Harris County Water Control & Imprvt. Dist. 32, Court House, Proj. 3, water mains, distr. sys., **$100,000**; Proj. 4, water supply, storage sys., **$164,000.** Frank J. Metyko, Scanlan Bldg., and R. J. Putney, 1503 Hadley St., consult. engrs. CD 4/9.

Wash., Prosser—City, City Hall, imprv. water system incl. reservoir. **$100,000.** R. W. Johnson, Arctic Bldg., Seattle, Zone 4, consult. engr.

SEWERS, WASTE DISPOSAL

Ark., Gurdon—City, voted bonds, sewer imprvs. **$280,300.** CD 3/10/50.

Calif., Chino—City, voted **$300,000** bonds, exten. sewer mains.

▲ **Ill., Chicago Heights**—Bloom Twp. Sanitary Dist., 307 E. 14 St., sewage treatment plant **$1,560,000.** Harry Ashdown, 1212 Edgewood St., consult. engr.

▲ **Ill., Waukegan**—City, City Hall, sanitary sewerage system, **$2,500,000,** Consoer Townsend & Assocs., 351 E. Ohio St., Chicago, Zone 11, consult. engrs. Milton E. Staben, 222 Market St., Waukegan, engr. CD 11/30/50.

Ind., West Lafayette—Bd. P. Wks., City Hall, sewage treatment plant, **$500,000.** Lennox & Mathews, 644 E 30 St., Indianapolis, Zone 5, consult. engrs.

Kan., Concordia—City, voted **$406,000** bonds Apr. 1, sewage plant. CD 3/24.

Mass., Dedham—Town, Bd. Selectmen, Memorial Hall, sewers, various locations, **$150,000,** E. Worthington, 26 Norfolk St., consult. engr.

Minn., St. Paul Park—Village, F. S. Goth, clk., defeated **$140,000** Apr. 15, sewer extensions. CD 3/13.

Mo., Rich Hill—City, sewers and sewage plant, **$200,000.** K. H. Larkin & Assoc., Wirthman Bldg., Kansas City, Mo., consult. engrs.

Neb., Lincoln—City, City Hall, storm sewers, Havelock area from 61 and Judson Sts. to 56 and Folfax Sts. **$150,000.** D. L. Erickson, city engr.

O., Bluffton—City, sewage disposal plant sys. and intercepting sewers, **$580,000.** Finkbeiner, Pettis & Strout, 518 Jefferson St., Toledo, consult. engrs. CD 11/-16/50.

O., Columbus—Franklin Co., Court House, Imprv. No. 384, sewers, 10,060 ft. 8- to 33-in. pipe from Sullivant Ave. and Columbus corporation line west to new Westinghouse Plant. **$190,000.** Desso T. Mitchell, county sanitary engr.

Tex., Houston—Harris County Water Control & Imprvt. Dist. 32, Court House, Proj. 1, sanitary sewer collection lines, mains, **$125,000**; Proj. 2, sewer treatment plant, **$78,500.** Frank J. Metyko, Scanlan Bldg., and R. J. Putney, 1503 Hadley St., consult. engrs. CD 4/9.

Tex., Houston—W. C. Lowery, The Builder, 4100 DeLeon St., sanitary sewer collection lines, **$60,000**; storm sewers, drainage, **$60,000** in areas Sims Bayou Estates and off Westover.

Tex., Houston—B. F. Sturman, 204 Winkler Dr., storm sewers, **$60,000**; sanitary sewers, **$66,500** off portion Bunker Hill Rd., 175-acres called "Lakeview."

Ont., Kingston—City, C. A. Curtis, mayor, City Hall, west and relief sewers, **$380,000.** V. R. Currie, City Hall, comr. Works. CD 5/19/50.

Ont., Waterloo—Council, sewer extensions and laying trunk sewer **$350,000.** E. E. Oke, City Hall, city engr. CD 7/24/46.

BRIDGES

Tex., Abilene—City, City Hall, voted bonds Apr. 1, bridge and drainage, **$100,000.** CD 3/5.

Alta., Ardley—Canadian National Rys., 460 McGill St., Montreal, Que., replacement washed-out railway bridge across Red Deer River. **$500,000.**

STREETS AND ROADS

Minn., Wayzata—City, Earl Wagner, mgr., wid'n., pave Lake St. (Hennepin Co. Hy. 7) from Berry to Ferndale Aves., **$120,000.** L. P. Zimmerman, Court House, Minneapolis, hy. engr.

Tex., Abilene—City, City Hall, voted bonds reconstruction, repairing, reconditioning portion existing streets. **$250,000**; street paving, **$475,000.** CD 4/8.

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Wash., Moses Lake—City, City Hall, street imprvs. incl. storm sewers, curbs, and sidewalks in central section of city, **$400,000.**

Wash., Seattle—City, County-City Bldg., Zone 4, wid'n. 15 Ave. S. and Columbia Way, **$110,000.** R. W. Finke, city engr.

EARTHWORK, WATERWAYS

Neb., Lincoln—Lancaster Co. Sanitary Dist. 1, Court House, channel and bridge imprvs. at Dead Man's Run. **$395,270.** W. B. Coale, c/o owner, engr.

▲ **Neb., Lincoln**—Lancaster County Sanitary Dist. 1, Court House, channel and bridge imprvs., Antelope Creek, **$1,672,760;** at Salt Creek, **$2,132,000.** W. B. Coale, c/o owner, engr.

AIRPORTS

▲ **Mass., East Boston**—TERMINAL BUILDING—State, State Airport, Management Bd., Boston, central terminal bldg., Logan Airport. **$7,000,000.** CD 4/13/48.

Va., Norfolk—HANGAR—Norfolk Port Auth., Bd. Trade Bldg., hangar for lease to Piedmont Aviation, Inc. **$100,000.**

LATIN AMERICA

▲ **Ecuador, Guayaquil**—Manabi Exploration Co. Inc., Guayaquil, Ecuador, plans crude-stripping plant. **$1,750,000.**

▲ **Mexico**—Pemex—Petroleas Mexica, Mexico City, plans gas main line from vicinity of Tampico to Reynosa at the border, **$18,000,000.** CD 1/4/51.

PUBLIC BUILDINGS

▲ **Calif., Riverside**—ADMINISTRATION, etc.—University of California, 405 Hilgard Ave., Los Angeles, plans by Clark & Frey, 879 N. Palm Canyon Dr., Palm Springs, administration and classroom bldg. at Citrus Experiment Station, **$1,280,000;** plans by Chambers & Hibbard, 124 W. 4 St., Los Angeles, plant science and biological science bldg., **$1,200,000;** plans by Bennett & Bennett, 1165 E. Colorado St., Pasadena, physical science bldg., **$829,000;** plans by Latta & Denney, 940 Alma St., Glendale, library and classroom bldgs., **$800,000;** greenhouse, **$294,000;** plans by Arthur Froelich, 383 S. Robertson Blvd., Beverly Hills, physical education bldg., **$750,000;** all foregoing at Riverside Campus.

▲ **Conn., West Hartford**—COMMUNITY—Town Bd. of Selectmen, plans by Lester B. Scheide, 154 Kenyon St., Hartford, community bldg. **$1,000.000.**

▲† **D. C., Wash.**—HOSPITAL—Veterans Admin., Vermont Ave. between H and I Sts. N.W., Wash. 25, D. C., architectural work being done by Veterans Administration, 500-bed standard hospital, incl. concrete core bomb shelter, **$9,000,000-$11,000,000.** CD 10/10/46.

▲ **Fla., Avon Park**—HOSPITAL—State, c/o Gov. Fuller Warren, Tallahassee, hospital for chronic alcoholics, **$1,000,000.** CD 6/1/46.

Ga., Augusta—SCHOOL—Richmond Co. Bd. Educ., 422 7 St. plans by F. Arthur Hazard, Marion Bldg., Murphey Junior High School, **$595,000.**

Ind., Bluffton—SCHOOL—Bluffton School City, Bluffton, gymnasium and classroom for Bluffton Central School, **$400,000.** CD 5/3/48.

O., Bay Village—SCHOOL—Bd. Educ., Bay Village, plans by Mellenbrook, Foley & Scott, 26 Front St., Berea, school, Normandy Rd. near Dover Center Rd. **$543,000.**

O., Cleveland Heights—SCHOOL—Bd. Educ., 1749 Lee Rd., plans by Outcalt, Guenther & Assoc., engrs.-archts., 13124 Shaker Square, Cleveland, elementary school, Crest and Maple Rds., to be known as Severance A. Milliken School. **$600,000** (1st unit, plus $400,000 later). CD 11/21/49.

O., Warrensville—NURSES RESIDENCE—Cuyahoga Co., Court House, Cleveland, five unit (4-suites each) 1 story, brick, ranch-type nurses residences, incl. health offices and 2 doctors suites on grounds of County Hospital for Tuberculosis, Harvard Rd. between Green and Richmond Rds., Warrensville Twp. **$400,000.** G. R. Bartling, George S. Rider Co., 3800 Terminal Tower, Cleveland, consult engrs. CD 11/11/49.

▲ **Pa., Canonsburg**—HOUSING—Washington Co. Housing Auth., Washington, plans by J. Kenneth Meyers, 524 4th Ave., Pittsburgh, 2 story bsmnt., 132 family irregular shaped housing, **$1,500,000.**

▲ **Pa., Ellwood City**—HOUSING—Lawrence Co. Housing Auth., New Castle, plans by The Thayer Co., 408 Greer Bldg., New Castle, 100 unit housing, **$1,250,000.** Leslie Wilson, 35 N. Mercer St., New Castle, consult. engr. CD 7/10.

▲ **Pa., Washington**—HOUSING—Washington County Housing Auth., Washington, plans by J. Kenneth Meyers, 524 4th Ave., Pittsburgh, 2 story, 120-family brick veneer housing. North Strabane Twp. **$1,250,000.**

S. C., North Augusta—HIGH SCHOOL—City, high school. **$393,000.**

▲ **Tex., Abilene**—SCHOOLS—Abilene Independent School Dist., Abilene, voted bonds Apr. 1, school remodeling, addn., **$350,000;** Elementary School No. 1, **$375,000;** Elementary School No. 2, **$300,000;** Elementary School No. 3, **$400,000;** Grade School No. 1, **$400,000;** Grade School No. 2, **$425,000;** Junior-Senior High School, **$750,000;** Senior High School, **$850,000;** stadium and field house, **$125,000.** CD 4/8.

Tex., Knox City—HOUSING—Knox City Housing Auth., Knox City, plans by Paul G. Bentley, 228 Reserve Loan Life Bldg., Dallas, 100 low-cost housing units. **$750,000.** CD 4/23.

▲ **Tex., Marshall**—SCHOOLS—Marshall Independent School Dist., Marshall, elementary school for Negroes. **$300,000;** High School for Negroes, **$350,000;** Junior School for Whites, **$375,000.** CD 12/5/46.

▲ **Tex., Terrell** — HOUSING — Terrell Housing Auth., Terrell, plans by Bentley-Broad & Nelson, engrs.-archts., 228 Reserve Loan Life Bldg., Dallas, 300 low-cost housing units. **$2,250,000.** CD 11/13.

▲ **Vt., Bennington**—HIGH SCHOOL—Pownal-Bennington Rural Schools, Inc., Supt. Schools, Bennington, plans by Marcus T. Reynolds, 143 Washington Ave., Albany, N. Y., Regional High School. **$1,000,000.** CD 7/31.

▲ **Va., Princess Anne**—SCHOOLS—Princess Anne Co. Bd. Educ., Princess Anne, bond election May 27, Thalia High School, **$2,500,000;** Negro Training School, **$300,000.**

▲ **Va., Norfolk**—HIGH SCHOOL—City, City Hall, plans by A. Ray Pentecost, Jr., Colonial Ave. and 21 St., South Norfolk High School. **$1,000,000.**

Wash., Grandview—SCHOOLS—School Bd., Grandview. Plans by J. S. Villesvik, 109 N. 3 St., Yakima, elementary school, **$485,000.** Bonds voted. CD 11/2.

Wash., Kelso—HOUSING—Kelso Housing Auth., Kelso, plans by Arthur Riehl & Assocs., 1107 Franklin Ave., Seattle, 50-unit housing, **$400,000.**

▲ **Wis., Madison**—ATHLETIC PRACTICE FIELD—University of Wisconsin, Madison, plans by Fitzhugh Scott & Fitzhugh Scott Jr., 5623 N. Lake Dr., Milwaukee, Zone 2, and Roger C. Kirchhoff, c/o owner, 1 and 2 story, 60 ft. high at center, 232x500 ft., athletic practice field, **$1,000,000.** Ammann & Whitney, 723 D. Mason St., Milwaukee, Zone 2, consult. engr.

† **Wis., Milwaukee**—ARMORIES—U. S. Eng., 429 Federal Bldg., plans by Brust & Brust, 135 W. Wells St., Zone 3, two armories and two storage sheds. **$758,000.** CD 4/18/51.

Wis., River Falls—LIBRARY—Bd. Regents, Normal Schools, Madison, plans by Foeller, Schober, Berners, Safford & Jahn, 310 Pine St., Green Bay, library at State Teachers College, **$550,000.** CD 7/25.

Wis., Stevens Point—LIBRARY—Bd. Regents, Normal Schools, Madison, plans by Foeller, Schober, Berners, Safford & Jahn, 310 Pine St., Green Bay, library at State Teachers College, **$550,000.** CD 7/25.

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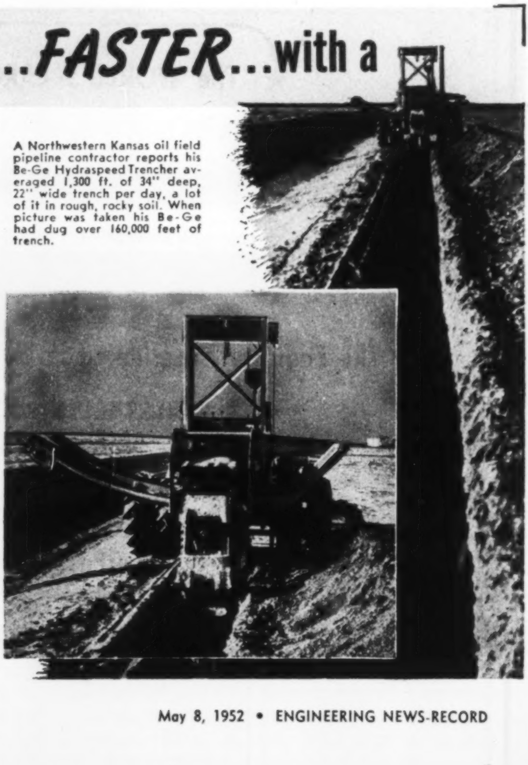

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COMMERCIAL BUILDINGS

▲ **Ariz., Phoenix**—BANK, etc.—Valley National Bank, Professional Bldg., plans by H. H. Green, Security Bldg., 6 story bank and office, **$3,500,000.** CD 7/28/50.

Fla., Madeira Beach—RESIDENCES—James H. Ashmore, c/o Alex M. Archibald Realty Co., Maderia Beach, residences, **$400,000.**

Ill., Chicago—SCHOOL—Sisters of Christian Charity, Paulina St. and Bryn Mawr Ave., plans by Geo. C. Smith, 2104 E. 71 St., Zone 49, St. Gregory High School, 1643 W. Bryn Mawr Ave., **$600,000.**

▲ **Md., Silver Spring** — APARTMENTS — Armstrong Apartments, Inc., A. Klein, vice pres., 145 Kennedy St. N.W., 10 buildings, 210 apartment units, north of East West Hy., west of future Columbia Blvd. **$2,000,000.**

▲ **Md., Upper Marlboro**—RESIDENTIAL DEVELOPMENT, etc.—Spring Garden Assoc., c/o Morris Miller, 8007 Eastern Ave., Silver Spring, plans by Corning & Moore, 1726 M St. N. W., Wash., D. C., Oxen Hills residential development, 700 housing units, **$5,600,000;** Oxen Hills Shopping Center, **$750,000.** CD 2/8.

▲ **Mass., Brookline**—APARTMENT—Westbourne Apartments, c/o Arthur G. Manaselian, archt., 340 Main St., Worcester, apartment, 1600 Beacon St., **$3,000,000.**

Mass., Springfield—HALL OF FAME—National Assoc. Basketball Coaches, c/o Collins, Willis & Beckonert, archts., 20 Newbury St., Boston, Basketball Hall of Fame, Springfield College Campus, **$400,000.**

Mo., Monett—HOSPITAL—St. Vincent's Hospital, Don Pray, chn., Monett, plans by Morgan, Gelatt & Assoc., 217 F & M Bank Bldg., Burlington, Ia., hospital addn. **$840,000.** CD 11/12/47.

O., Cincinnati—CHURCH, etc.—Anderson Hills Community Methodist Church, Rev. Forrest Hubbell, 7794 Beechmont Ave., church bldg. and 2 story educational wing, Beechmont Ave. and Forest Rd. **$500,000.** A. M. Kinney, Inc., 2905 Vernon Pl., consult. engr.

▲ **O., Maple Heights**—SHOPPING CENTER, APARTMENT, etc.—Northfield Center Development Co., (Maurice J. Fishman and A. Siegler & Sons), 4923 Lee Rd., Shaker Heights, shopping center, apartment and home project. **$17,000,000.**

Pa., Millbourne—SUPER MARKET—Baltimore Markets, 2301 Market St., Phila., plans by Joseph Margolis, 2206 St. James St., Phila., super market. **$450,000.**

▲ **Pa., Pittsburgh**—HOTEL—Pick Hotels Corp., Roosevelt Hotel, 7 story brick, block hotel addn. **$4,000,000.**

▲ **Tex., Amarillo**—CHURCH—First Baptist Church, Amarillo, plans by Rittenberry & Rittenberry, Fisk Bldg., church addn. **$2,000,000.** CD 9/19.

▲ **Tex., Borger**—DWELLINGS—Lanhome Development Co., Inc., Borger Proj. 1, Proj. 2, 40 frame dwellings, asb. siding, **$325,000;** Proj. 3, 44 frame dwellings, cedar post fdn., **$340,000;** Proj. 4, 26 frame, masonry trim dwellings, concrete slab fdn., **$350,000.**

Tex., Brazoria—HOUSING—Federal Housing Admin., Houston Title Bldg., Houston, 75 low-rental private housing units, **$596,000.**

▲ **Tex., Fort Worth**—HOSPITAL—Harris Hospital, 1300 W. Cannon St., plans by W. G. Clarkson & Co., 819 Penn St., addn. 10th floor to present hospital, construct 4 story addn. on south side, 2 story on east and west sides, brick, steel, concrete const. **$1,450,000.** CD 3/28/51.

▲ **Tex., Harlingen**—HOSPITAL—Valley Baptist Hospital, c/o T. H. Morrison, Jr., Harlingen, hospital, incl. polio treatment center. **$2,000,000.** CD 2/27.

Tex., Houston — DWELLINGS — W. C. Lowery, 4100 DeLeon St., 20 mosty masonry dwellings, **$325,000;** 45 frame, masonry dwellings, concrete slab fdn., **$450,000;** 40 frame, masonry trim dwellings, etc. concrete slab fdn., **$400,000,** between New Andover and Overbrook across from Sims Bayou Estates.

▲ **Tex., Houston**—HOTEL—Rice Hotel, Main St., 18 story 300-room hotel annex. **$3,000,000;** dining hall, **$750,000.**

▲ **Tex., Waco**—DORMITORY, etc.—Baylor University, Waco, women's dormitory, **$1,000,000;** school of law, **$400,000.**

Tex., Waco—DORMITORY—Baylor University, Waco, plans by Easterwood & Easterwood, Bewley Bldg., Fort Worth, Proj. 1, 100 men dormitory, **$300,000;** Proj. 2, 100 men dormitory, **$325,000;** Proj. 3, 100 men dormitory, **$350,000.** CD 4/11.

▲ **Tex., Wichita Falls**—HOUSING—Federal Housing Admin., Electric Bldg., Fort Worth, 160 low-rental private housing units. **$1,260,000.** CD 2/6.

Va., Fairfax—SHOPPING CENTER—N. Basiliko, 1025 Vermont Ave. N.W., Wash., D. C., shopping center, Edsal Rd., east of Shirley Hy. **$900,000.**

▲ **Wash., Seattle**—STORE—Bon Marche, 4 Ave. and Pine St., department store addn. **$2,121,000.**

Ont., London—CHURCH—Talbot Street Baptist Church, Edward Wilkins, 1014 Harrison Ave., Plans by L. G. Bridgeman, Royal Bank Bldg., 75x163 ft., brick, stone, steel church, **$500,000.**

INDUSTRIAL BUILDINGS

▲ **Ariz., Florence**—REFINERY—West Coast Pipe Line Co., c/o R. J. Bradley, 4012 Marquet St., Dallas, Tex., 15,000 bbl. daily capacity crude oil refinery, **$2,570,000.**

▲ **Ill., Skokie**—FACTORY—Chicago Metallic Mfg. Co., 3711 S. Ashland St., Chicago, Zone 9, plans by A. Epstein & Sons Co., 2011 W. Pershing Rd., Chicago, Zone 9, Ill., 200,000 sq. ft. factory, **$1,750,000.**

Ind., Shoals—PLANT—Sherfick Mfg. Co., E. Moore, Shoals, rebuilding plant, **$300,000.**

Ind., Hammond—WAREHOUSE—Libby-McNeill & Libby, Columbia and Field Ave., plans by W. Fred Dolke, 183 W. Madison St., Chicago, 3, Ill., warehouse and trackage and driveway addn. **$300,000.**

Ia., Fort Dodge—FACTORY—Horn Mfg. Co. Div. Avco Mfg. Corp., 420 Lexington Ave., New York, N. Y., plans by Frank W. Griffith, Warden Bldg., factory addn. **$350,000.**

▲ **La., Buras**—PLANT—Delta Chemical Corp., Buras, plant addns., **$3,000,000.**

La., Lake Charles—PLANT—Mathieson Chemical Corp., Lake Charles, plant addns. **$375,000.**

▲ **Minn., Aurora**—PLANT—Erie Mining Co. (Bethlehem Steel Corp., Youngstown Sheet & Tube Co. and Dalton Ore Co.), c/o Pickands, Mather & Co., Union Commercial Bldg., Cleveland, O., taconite development, processing facilities, town power plant, railroad, **$300,000,000.**

Mo., Independence—STORAGE—Allis-Chalmers Mfg. Co., Waldheim Bldg., Kansas City, Mo., plans by Carl Meyers, c/o owner, and Neville, Sharp & Simon, 12 and Walnut St. Bldg., Kansas City, Mo., storage bldg. **$400,000.** CD 1/21.

N. Y., Flushing—FACTORY—Sherman & Co., 36-07 Prince St., factory, 36-05 Prince St. **$279,000.**

N. C., Canton—PLANT—Champion Paper & Fibre Co., Canton, plant addns. **$475,000.**

▲ **N. C., Enka**—PLANT—America Enka Corp., Enka, plant addns. **$1,300,000.**

▲ **N. C., Henderson**—MILL—Henderson Cotton Mills, Henderson, mill addns. **$2,000,000.**

N. C., High Shoals—MILL—Carolinian Mills, High Shoals, mill addns. **$885,000.**

▲ **N. C., Marion**—PLANT—Clinchfield Mfg. Co., Marion, plant adns. **$2,400,000.**

▲ **N. C., Mooresville**—MILL—Burlington Mills Corp., Mooresville, mill addns. **$1,400,000.**

▲ **N. C., Pisgah Forest**—PLANT—Ecusta Paper Corp., Pisgah Forest, plant addns. **$1,500,000.**

▲ **N. C., Winston-Salem**—P. H. Hanes Knitting Co., 601 N. Main St., plant addns. **$1,250,000.** CD 11/29/45.

O., Athens—WAREHOUSE—Columbus & Southern Ohio Electric Co., 215 N. Front St., warehouse, **$113,744.** CD 3/22/51.

▲ **O., Cleveland**—WAREHOUSE, etc.—Cleveland Electric Illuminating Co., 75 Public Square, 103,000 sq. ft. warehouse and garage addns., E. 146 St. near Miles Ave., **$1,145,400.**

Okla., Henryetta—PLANT—Southwestern Electronics Co., Henryetta, plant to mfg. quartz crystals. **$250,000.** J. W. McIvers, c/o owner, engr.

Okla., Pauls Valley—DEHYDRATION PLANT, etc.—Lone Star Gas Co., 1915 Wood St., Dallas, Tex., dehydration plant, **$400,000;** gas booster station, **$350,000,** near here.

▲ **Pa., Erie**—PLANT—Joe Donovan, 828 Peach St., plans by John S. Gifford & John Sunda, 119 W. 8 St., 10 story bsmnt., 90x260 ft., steel deck aluminum panelling plant. **$1,250,000.**

Pa., Phila.—MANUFACTURING—Richmond Metal Mfg. Co., 2914 Richmond St., mfg. bldg., **$350,000.**

S. C., Rock Hill—PLANT—Celanese Corp. of America, Rock Hill, plant addns. **$875,000.** CD 4/11/51.

Tex., Andrews—PLANT—Martinpool Gasoline Co., Andrews, reconstruct gasoline plant, 16 mi. west of here. **$750,000.**

▲ **Tex., Arlington**—PLANT—Bell Aircraft Corp., c/o Blue Mound Rd., Fort Worth, helicopter plant, **$2,906,675.**

▲ **Tex., Borger**—PROPANE STORAGE—Phillips Petroleum Co., Bartlesville, Okla., propane storage facilities. **$1,466,470.**

▲ **Tex., Dallas**—PLANT—General Instruments, Inc., 6000 Lemmon St., plant, (electronic and electrical equip.). **$10,000,000.**

Tex., Henrietta—DEHYDRATION PLANT, etc.—Lone Star Gas Co., 1915 Wood St., Dallas, dehydration plant unit, **$500,000;** booster station, **$300,000.**

Tex., Houston—PLANT—Electro-Technical Laboratories, Inc., 504 Waugh Dr., plans by Woestemeyer & Gaffney, 4132 Coleridge St., 80x200 ft., 16,000 sq. ft. steel frame, masonry mfg. plant, air-conditioning. **$100,000.**

Tex., Houston—PLANT—Johnson Tester, Inc., 5702 Navigation Blvd., plans by Marvin C. Moore, 2006 W. Alabama St., 3 one story bldgs., shop, maintenance, etc., on 7-acre tract, 9800 Blk. S. Main St. **$125,000.** Walter P. Moore, 4605 Montrose Blvd., consult. engr.

Tex., Longview—STORAGE, etc.—Longview Wholesale Meat Co., c/o I. R. Daniels & James H. Baskins, Longview, wholesale storage and refrigerated area. **$100,000.**

Tex., Post—MILL—Postex Cotton Mills, Post, cotton text mill addns. (1) 67x100 ft. bleachery dept. addn. (2), 90x135 ft. weave shop addn., rein.-con. fdn., masonry, frame constr. **$125,000.**

Vt., Rutland—FACTORY—Samica Corp., c/o Webber & Erickson, archts., 56½ Merchants Row, factory between Rutland and Clarendon. **$150,000.** Cleverdon Varney & Pike, 120 Tremont St., Boston, Mass., structural engrs. Ned Jennison, Burlington, mech. engr. CD 4/3.

▲ **Va., Danville**—MILL—Dan River Mills, Danville, mill addns. **$2,145,000.**

▲ **Va., Danville**—PLANT—Thompson Products, Danville, plant addns. **$1,000,000.**

Va., Fairfax—WAREHOUSE—N. Basiliko, 1025 Vermont Ave. N. W., Wash., D. C., warehouse, Edsal Rd., east of Shirley Hy. **$600,000.**

Va., Norfolk—WAREHOUSE, etc.—Elizabeth River Terminals, Inc., James A. Monroe, 6909 Mallard Dr., warehouse and docks. **$500,000.**

Wash., Seattle—WAREHOUSE—Alaska Copper & Brass Co., 902 1 Ave. S., warehouse, **$156,400.**

Wash., Seattle—PLANT—Overall Cleaning & Supply Co., 220 Yale Ave. N., cleaning plant **$139,000.**

▲ **Wash., Seattle**—HEATING PLANT—Seattle Steam Corp., Henry Bldg., Zone 1, rehabilitate steam heating plant and distr. system, **$1,000,000.**

Wash., Seattle—WAREHOUSE—Stack Steel & Supply Co., 500 Lander St., warehouse, **$148,500.**

▲ **Wyo., Midwest**—PLANT—Continental Oil Co., Elk Basin, gasoline recovery and gas repressuring plant, Sussex Field, Johnson Co., 15 mi. north of here, **$1,750,000.**

▲ **Ont., Hamilton**—PLANT UNIT—United Steel & Metal Co., Ltd., 363 Wellington St. N., plans by Prack & Prack, 310 Main St. E., plant unit, Burlington St. East, on 42 acre site **$1,000,000.**

UNCLASSIFIED

Arizona — RURAL DISTRIBUTION LINES — Sulphur Springs Valley Electric Co-operative, Willcox, system imprvts. and completion of previously approved construction, Cochise Co. **$630,000.** CD 5/24/48.

Arkansas—POWER LINES—Arkansas Power & Light Co., Simmons National Bldg., Pine Bluff, power lines, Mount Ida, Montgomery Co. **$104.000.** CD 6/7/50.

Indiana—TRANSMISSION LINES—Indiana & Michigan Electric Co., 122 E. Wayne St., Fort Wayne, modernize 33,000 volt transmission line between Fort Wayne and Churubusco, about 7 mi., also 4½mi. transmission line connecting Columbia and Whitley Sub-station, **$150,000.**

Mass., Boston—TRAFFIC LIGHTS—City, Traffic Auth., City Hall, install 25 traffic lights, **$100,000.**

Mich., Detroit—CONSERVATORY—City, John J. Considine, supt. Dpt. Parks, restoration of dome of conservatory, Belle Isle, **$300,000;** electric lighting, night baseball diamond, **$75,000.** George R. Thompson, city engr. CD 3/30/43.

Okla., Pauls Valley-Maysville—GAS LINES—Lone Star Gas Co., 1915 Wood St., Dallas, Tex., gas collection lines, near here, Garvin Co. **$250,000.**

▲ **Texas and Oklahoma**—GAS LINE—Lone Star Gas Co., 1915 Wood St., Dallas, laying 70 mi. 20 in. welded joint gas line from vicinity of Henrietta, Tex. to point near Maysville, Okla. **$1,875,000.** CD 6/19/50

▲ **Texas., New Mexico, Arizona and California**—OIL PIPE LINE—West Coast Pipe Line Co., c/o R. J. Bradley, pres., 4012 Marquet St., Dallas, Tex., construct approx. 1,020 mi. 20 in. welded joint crude oil pipe line from Wink, Tex., to Norwalk and Los Angeles, Calif. **$75,000,000.** CD 8/31/50.

Texas — RURAL DISTRIBUTION LINES — Deaf Smith County Electric Co-operative, Hereford, 9 mi. 69-KV transmission lines; one 7,000 KVA sub-station with 4 breakers; 25 mi. rural distr. and tie lines, Hereford and Deaf Smith Counties. **$130,000.** H. N. Roberts & Assoc., 1310 Avenue "Q", Lubbock, consult. engrs. CD 12/17/48.

▲ **Texas** — RURAL DISTRIBUTION LINES — Medina Electric Co-operative, Hondo, 168 mi. rural distr. lines, 13,500 kw diesel generating plant at Hondo, Medina Co. **$3,700,000.** J. W. Beretta Engineers, Inc., 902 Travis Bldg., San Antonio, consult. engr. CD 4/15.

▲ **Texas**—TELEPHONE LINES—Texas Telephone Assn., c/o Earl Nunnally, Decatur, addnl. rural pole telephone lines, at Denton, Denton Co., **$175,000;** at Gainesville, Cooke Co., **$225,000;** at Montague, Montague Co., **$200,000;** at Bridgeport, Wise Co., **$225,000;** at Grapevine, Tarrant Co., **$250,000;** at Springtown, Parker Co., **$150,000;** at Henrietta. Clay Co., **$150,000;** at Sherman, Grayson Co., **$235,000;** at Bryson, Jack Co., **$175,000.**

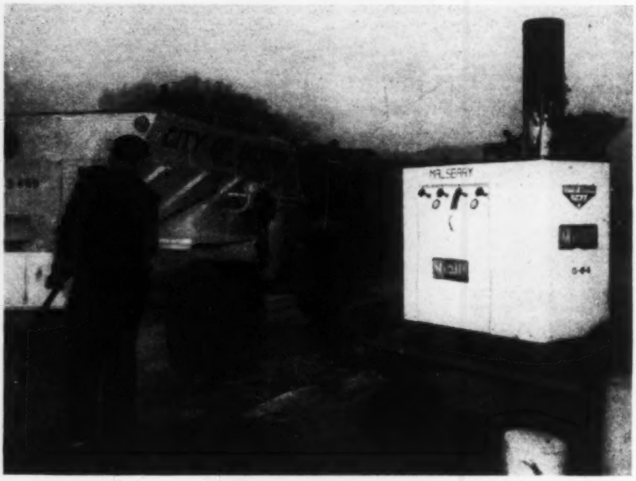
Tex., Dallas—GAS MAINS, etc.—Dallas Power & Light Co., Dallas Power & Light Bldg., laying gas mains in new areas of Piedmont Addn. and East Park Ridge Addn. **$79,638;** construct sect. of vapor lighting sys. on portions Jackson, Young and Wood Sts., **$65,070.**

Tex., Pampa—CABLES—Southwestern Bell Telephone Co., 308 S. Akard St., Dallas, install underground cables in 2 directions south from dial bldg. **$225,000;** install underground cables in 2 directions north of dial bldg., **$250,000;** telephone line sys. rehabilitation, **$200,000.**

Wis., Madison—BARN—University of Wisconsin, Madison, plans by Law, Law Potter & Nystrom, 121 S. Pinckney St., barn. **$250,000-$300,000.**

Wyoming—RURAL DISTRIBUTION LINES—Tri-County Electric Assn., Sundance, 141 mi. rural distr. lines, 10 mi. transmission line, communication facilities and completion previously approved construction, Crook Co., **$380,000.** H. S. Nixon Eng. Co., W.O.W. Bldg., Omaha, Neb., consult. engr.

NEW PRODUCTS



Steamer gets around on trailer

Pleased with the efficiency of his Malsbary steam cleaning machine a maintenance superintendent in Boston, Mass. mounted the rig on a trailer, hooked it to the rear of a pickup truck and now moves it around with little trouble to all of his equipment yards. Here a Model 250 is shown putting finishing touches on a road sander after a recent snowstorm. Dan Coughlin, superintendent of automotive maintenance for the City of Boston says he can completely clean this type of truck in 1 hour. Shovel loaders and street sweepers can be handled in 45 min and 2 hr respectively.

There are two other heavy-duty Malsbary cleaners. They can produce pressures of 250 to 400 lb, capacities of 300 to 2,100 gph and hot water of any temperature up to boiling point. Malsbary Manufacturing Company, Room R, 845 92nd Avenue, Oakland, California.

Plaster mixer has lifetime shaft seal

A new plaster and mortar mixer with 6 cu ft capacity and known as "Model 80" was recently announced. Among the improved new features is the Muller Everlasting Shaft Seal which is said to replace the conventional stuffing boxes and packing. This new seal not only reduces friction loss but also alleviates wear on the paddle shaft. As a result of extreme field tests the company guarantees it against replacement during the entire life of the mixer. Power is optional with 4.5 hp or 7.7 hp Briggs and Stratton air-cooled engines or a 3 hp electric motor. Muller Machinery Company, Inc., Metuchen, New Jersey.

Three pumps bring Rice line to seven

Rice Pump & Machine Co. has added three larger sizes to their line of self-priming centrifugal pumps. They conform to standards of the Contractor's Pump Bureau of AGC and are powered with air-cooled gas engines. The design of these larger units includes cartridge-type shaft seals, open, non-clogging impellers, hardened steel wearing plates, built-in check valves and straight line flow of water through suction openings to the impeller. These new sizes, 20M, 30M and 40M, are available mounted on skids, on two pneumatic tires or on steel wheels. They bring the Rice line now to seven pumps, all AGC-rated, in a range of sizes from 4,000 to 40,000 gph with electric motor drives, belted or direct connected. Rice Pump & Machine Company, Grafton, Wisconsin.

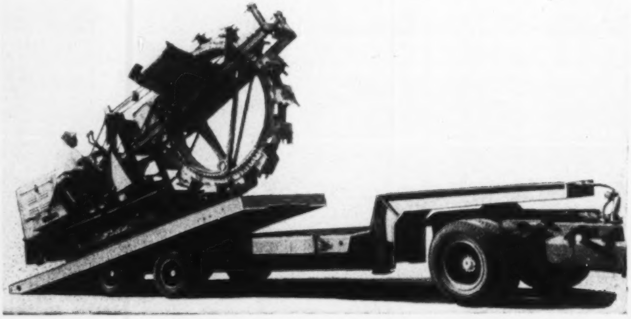
LaCrosse tilt trailer operated by one man

The entire 96-in. wide platform on this new LaCrosse GTTA tilt trailer tips back at the release of a simple lock, enabling a machine—in this case a Cleveland trencher—to climb aboard without the need of skids, timbers or cribbing. In five minutes, with the platform automatically locked in place, one man can have the rig on its way to the next job.

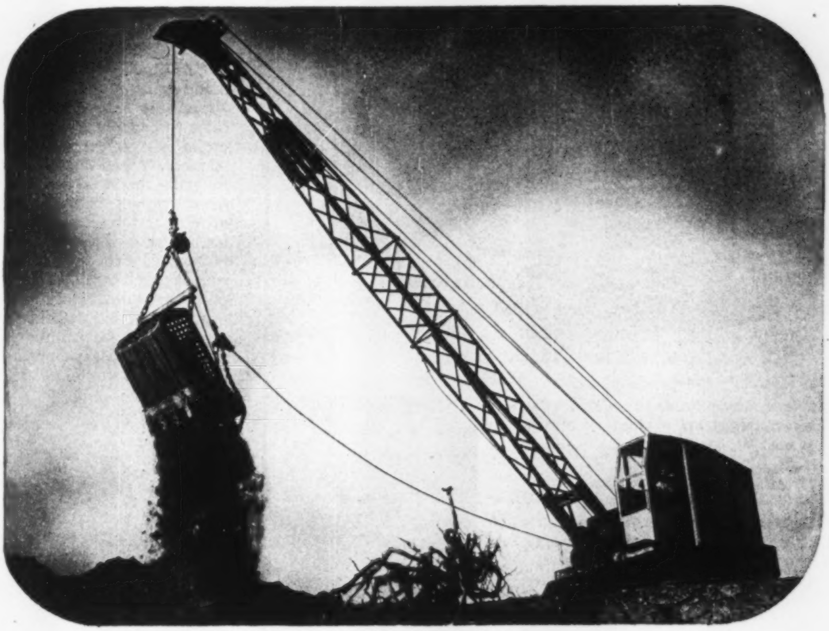
Available in 14, 18 and 22-ton capacities, the trailer is of tandem axle design. A pair of double-acting hydraulic cylinders cushion loads during tilting. Ruggedly constructed with one-piece formed gooseneck and subframe, it also features walking beams which support the axles and provide maximum oscillation for equal load distribution over any type road surface. Constant-rise S-type cam brakes operated by worm gear slack adjusters assure perfect braking contact at all times with either air or vacuum brakes.

The trailer carries eight 15-in. tires. Accessories include three lash hooks on each side as well as the usual lights, reflectors and stake pockets. La Crosse Trailer Corp., La Crosse, Wisconsin.

(Continued on page 138)



WIRE ROPE



This is the most economical rope we've ever made for construction equipment

ROEBLING is the best known name in wire rope. That's partly because we were the first wire rope maker in America. But more than that, we've always led in developing better wire and better rope for every purpose.

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There's a Roebling wire rope of the right specification for top service on any job. Call on your Roebling Field Man for his recommendations. John A. Roebling's Sons Company, Trenton 2, New Jersey.

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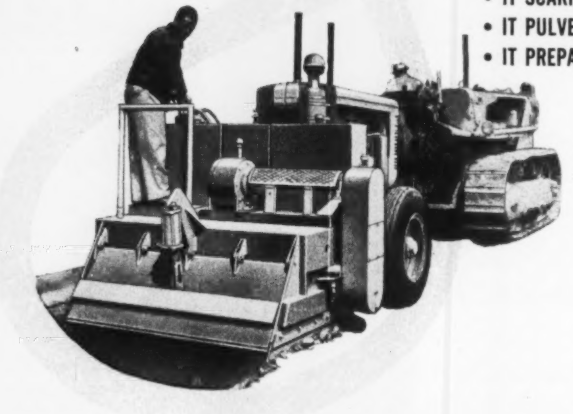
Dallas County, Texas, Saves Road Money

With WOOD Preparizer...

- IT SCARIFIES
- IT PULVERIZES
- IT PREPARES



Dallas County, Texas, District No. 1, uses a Wood P-600 Preparizer for re-processing and re-mixing old asphalt roads. This is what Mr. Roy Rasberry, District Road Supervisor, reports:

"Our Wood Preparizer has done more re-processing (pulverizing) and re-mixing of old asphalt roads faster and cheaper than any other method tried to date.

"We know that the money saved so far enables us to increase our roadbuilding program this next budget year.

"The Wood Preparizer is the finest pulverizer and mixer any county, city or state agency could own."

Here is further proof of where Wood Roadbuilding Equipment is **cutting road costs — saving taxpayers' dollars.** If you want **better roads** at **less cost** for your county, see your nearest Wood distributor or write direct for literature and prices on the Wood Preparizer, Wood Roadmixer and Wood Roadbuilding Equipment.

Roy Rasberry, District Road Supervisor, (Lynn Lawther, Commissioner), Dallas County; and R. W. "Cowboy" Smith of Highway Machinery Co., Dallas, Texas, Wood distributors.

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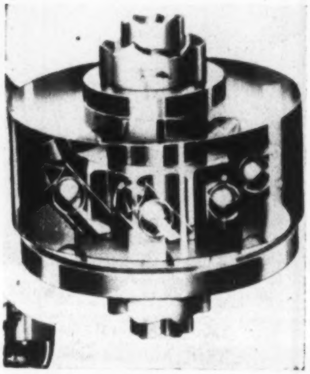
New products . . .

Ballomatic Backstop for vertical motors

Whenever electric motor current is interrupted, a vertical turbine water pump is apt to back-spin unless means are provided to prevent motor reversal and possible damage to pump bearings. On U. S. vertical hollowshaft motors a new device called the Ballomatic Backstop prevents such reversal. When the motor starts, centrifugal force throws the hardened steel balls out of engagement with the stationary member. When the motor stops, gravity pulls the balls down and one of them engages between the rotating member and the stationary ratchet (below) preventing reversal. The backstop is designed with a greater number of balls than ratchet flutes multiplying the possible number of locking positions in one rotation, and reducing impact and resultant wear to a minimum.—U. S. ELECTRICAL MOTORS INC., 200 E. SLAUSON AVENUE, LOS ANGELES 54, CALIFORNIA.



Fire detection alarm system

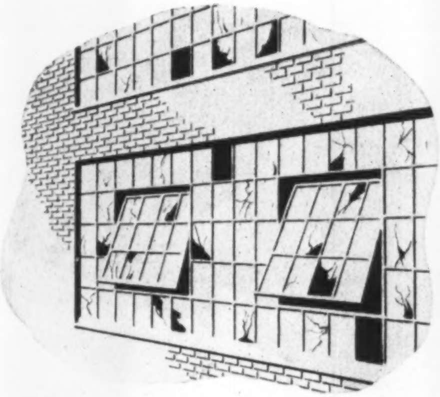
One of the "must" installations in any hotel, hospital, warehouse, theatre, etc. is a dependable fire detection-alarm system, and the one shown here has been approved by Underwriters' Laboratories as meeting all requirements of state laws for alarm systems in public buildings. The apparatus works on the temperature-rate-of-rise principle. Any undue temperature rise in a protected space causes expansion of air in copper tubing mounted on the room ceilings. Both ends of the tube terminate at a detector (see cut) and act on two opposing diaphragms to close an electrical circuit which sounds an alarm. Closed cylinders cushion any sudden

(*Continued on page* 141)

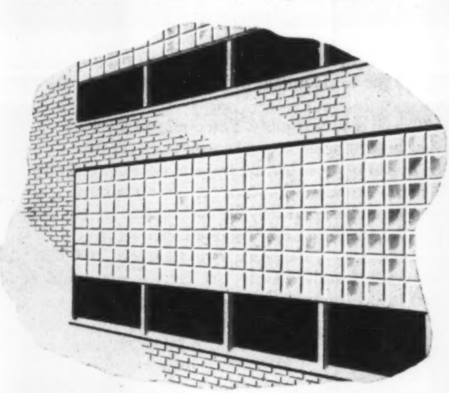
FACTS YOU SHOULD KNOW ABOUT

replacing old sash

WITH PITTSBURGH CORNING GLASS BLOCKS



QUESTION . . . Our old sash could not withstand the warm, humid, acid atmosphere in our plants. What material should we consider, with the limited budget available?



ANSWER . . . your best solution is PC Glass Blocks because they are unaffected by the conditions you describe. They do not decay, rot, rust, check or warp. Futhermore, you can extend your sash replacement program over any required period, or complete the entire job at once.

▶ When used to replace old, worn-out, inefficient window sash, panels of handsome PC Glass Blocks result in these definite advantages:

1. They help increase production by providing better lighting for workers and by keeping out dust and dirt for better product control.

2. They reduce maintenance costs. That's because PC Glass Blocks rarely require repairs or replacements. There's no wood or metal sash to decay, rot, rust or corrode. No periodic painting, puttying and caulking are involved. There's no expensive cleaning of small, individual panes. In fact, normal rainfall and routine maintenance preserve their high light transmittance. They have more than twice the insulating value of ordinary, single-glazed windows. That means reduced heating and air-conditioning costs; increased efficiency of the heating and cooling system.

3. Replacement programs are adaptable to budgets—large or small. The work can be done at once, or spread over any desired period of months or years. And the savings effected, users have discovered, pay for the installation in a relatively short time.

Why not put your problems up to our specialists? They'll be glad to help you, without any obligation on your part.

Other Facts: PC Glass Blocks cut off distracting views and outside noises; improve the appearance of any building, inside and out; are immediately available.

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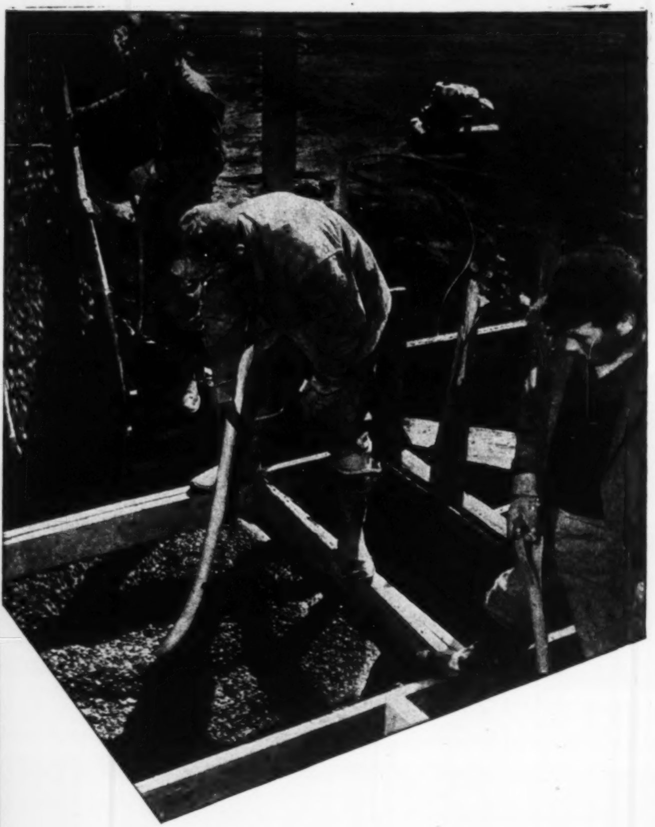
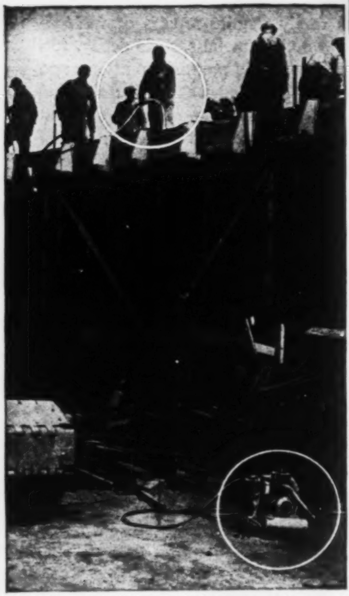
One man can use this VIBRATOR anywhere





Homelite Generator on ground powers vibrators on top of forms.

One man with a CP-Homelite unit, placing concrete as fast as it is delivered, does the work of an ordinary three man crew. Place the Homelite Generator in any convenient location—out of the way of the actual pouring operation—and use the CP-Homelite Electric Vibrator anywhere in a radius of 400 feet.

There's no flexible shaft to give trouble. You can bend the tough electric cable—in its neoprene hose handle—around corners or over forms without injuring it. And the extension hose handle permits working 25 feet down in a form. CP-Homelite Hicycle Vibrators run at a constant speed of 10,000 v.p.m., the most suitable frequency for concrete placement and will handle 30 to 40 cubic yards an hour of 2" slump concrete.

Your Homelite Generator will operate two vibrators and will also power other Hicycle tools, standard Universal Electric tools, and floodlights. Write for full information.

Carryable
Pumps • Generators •
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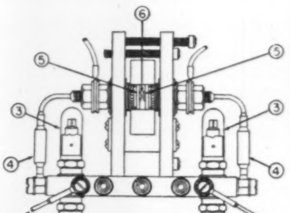
New products . . .

or momentary expansion of air in the circuit and these cylinders pass the air up through breathers which release it to the outside atmosphere at a predetermined rate. An abnormal continued rise in temperature, such as fire produces, causes the air to expand in the circuit faster than the breathers can discharge it, resulting in actuation of the alarm. Circuit tubing may be installed in a refrigerated area (where temperatures may be 10 deg F). or in a heat treating department (at 100 deg F). It is the temperature-rate-of-rise that actuates the detector, not a fixed temperature degree that must be reached. Outside power failures do not affect the operation of the detecting-alarm system since a self-charging wet battery, good for at least 60 hr., automatically cuts in if outside power fails, and a warning signanl sounds.

The system can sound a local alarm, transmit the warning to a central fire station, or even be connected to a municipal fire headquarters. Further, it will electrically control the stopping of motors, fans or blowers; closing of doors, etc. Installation is simple in either new or existing structures.—Walter Kidde & Company, Inc., 40 East 34th St., New York 16, N. Y.



This is how the Kidde fire detection alarm system works: Increasing temperature in a protected area causes expansion of air in tubing circuit (1), both ends of which terminate at compensators at determined capacity (2). From these, expanded air travels up through breathers (3), which release it to atmosphere at a definite rate. These breathers cannot pass off abnormal rises such as caused by fire so extra pressure travels through insulator tubes (4) which lead to opposing diaphragms (5) with platinum faced contact points (6). Pressure forces the diaphragms together closing an electrical alarm circuit.

(*Continued on next page*)

"EYE" BEFORE YOU BUY AND YOU'LL CH
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TRAILER SPECIFICATIONS

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Compare Rogers trailer specifications with others and study Rogers special features of construction. You're certain to be impressed.

Much equipment included Rogers trailers is considered extra in to yourself, consider every d ou'll choose a ROGERS.

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for Foundations, Dams,
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GROUT HOLES

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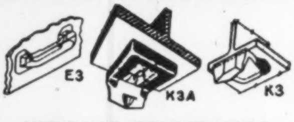

WELDING CONNECTORS

Saxe Welding Connection Units position and secure structural parts to be welded.

Clip K3A permits an adjustable connection.

These widely used units eliminate all hole punching and, with welding, produce the most economicol, safe and quickly erected structural frame.

Write for 1951 edition, Structural Welding Practice Manual.

J. H. WILLIAMS & CO.
Buffalo 7, New York
Air Reduction Canada, Ltd. Montreal 2, Canada

New products . . .

Pair of new scrapers for "Cat" DW10 tractors

Last week Caterpillar announced a pair of new scrapers for use with their DW10 tractors, labeled the No. 10 and the No. 15. With this added choice the user can match his rigs more closely to job requirements. No. 10, lighter of the two, weighs 15,440 lb and has a maximum carrying capacity of 11.5 tons; the No. 15 has a shipping weight of 17,850 lb and a 17-ton maximum carry. Struck capacities are 7 and 10 cu yd and heaped capacities 9 and 13 cu yd respectively. Sideboards are recommended for increased payloads provided material does not exceed 2,800 lb/yd. The scrapers' basic design is similar, both having a flat, double-bottom bowl of high-tensile steel. A stinger blade with reversible cutting edge is standard equipment; air brakes and tractor brakes are synchronized. CATERPILLAR TRACTOR COMPANY, PEORIA, ILLINOIS.

New product briefs . . .

A new **latch-type design wire rope cutter** has been developed by the **Banco Mfg. Company of Bradley, Ill.**, to supplement the well-known Guillotine line of metal cutting equipment. It exerts up to 50 tons thrust, which makes clean cut through wire rope up to 1¾ in.

Building material dealers and contractors can give prospective customers an accurate and realistic idea of how a particular form of asbestos siding will look when in place on a house by using an ingenious sales device called a **siding visualizer,** made by **The Ruberoid Co., 500 Fifth Ave., New York 36, N. Y.** In the form of an attractively bound portfolio, it shows a series of full-color close-ups of Ruberoid's new asbestos sidings, showing details of the surface texturing and color combinations.

A new, compact, **portable electric saw,** weighing only 10 lbs, which makes all cuts in 2-in. dressed lumber at a 45 deg. bevel cut, is announced by **Cummins Industrial, division of Cummins-Chicago Corp., Chicago 40, Ill.** It is being marketed under the name MAXAW 700.

Pittsburg Corning Corporation, 307 Fourth Ave., Pittsburgh 22, Pa., has added a full line of 12-in. patterns to its 8-in. line of **functional glass blocks.** Like their forerunners, they are available in both light-directing and light-diffusing patterns.

PUBLICATIONS

Cement testing equipment—Designed to provide accurate determination in maintaining standards of quality of concrete, asphalt and bituminous materials in the precision-built equipment illustrated in this 6-page bulletin. Descriptions of the Cenco-Menzel autoclave for testing cement soundness, entrained air indicator, ductility tester for bituminous material, viscosimeter and pentrometers are included in Circular 1212. CENTRAL SCIENTIFIC CO., 1700 IRVING PARK ROAD, CHICAGO 13, ILL.

Elevator sills—The Alexander sill, which operates like a drawbridge, fills the gap between elevator and building floors, providing a safe, smooth surface for trucks entering or leaving the elevator. Description of operation and appearance of five models of elevator door sills is offered in this illustrated circular. ALEXANDER SILL CO., 970 MILWAUKEE AVENUE, CHICAGO 22, ILL.

Record retention and destruction—This 24-page brochure is designed to aid management in the intelligent planning for disposition of records. Along with illustrations and reproductions of forms used for record retention and destruction, the handbook contains a checking chart listing various types of records and the suggested time element for their retention. REMINGTON RAND, INC., 315 FOURTH AVENUE, NEW YORK 10, N. Y.

Street lighting engineering guide—Eighty-four pages of guidance in design of street lighting systems are presented with charts, diagrams and photographs illustrating all sections. Purposes of street lighting, quality of light required, design procedures, roadway illumination computations and electrical distribution systems are considered. A section on maintenance suggestions lists costs as well as information on cleaning, relamping and inspection. Booklet B-5460, WESTINGHOUSE ELECTRIC CORP., BOX 2099, PITTSBURGH 30, PA.

Refractory products—Use and application of monolithic refractory constructions for municipal incinerators are listed in this 16-pager printed in two colors. The construction of arches and charging holes in chambers, flues and stacks is covered in detail as is the installation service for repairing, remodeling and new installation. PLIBRICO JOINTLESS FIREBRICK CO., 1800 KINGSBURY ST., CHICAGO 6, ILL.

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EDITORIALS

On the right track

A REPORT just issued by the National Society of Professional Engineers has significance far beyond its content. Entitled "How to Improve Engineer-Management Relations," the report is of importance chiefly to large industrial companies. What gives it significance to a far wider field is the evidence it brings that the National Society of Professional Engineers has uncovered a field of activity in which it can render a real service to a large and important part of the engineering profession.

Ever since that society was organized, its chief weakness has been a lack of challenging objectives. When it was set up, the engineering needs of its members were being met with reasonable sufficiency by the older engineering societies. Wisely, the founders of NSPE decided not to compete with those societies in the technical fields. Promotion of registration laws in states not having such laws gave its officers something concrete to work for during the society's early years, but those days are past.

The state societies, into which the members of NSPE are divided, always have been better off. They have such matters as perfection of their individual state license laws and enforcement of those laws as objectives; also watching legislation going through state legislatures to see that the interests of engineers are not adversely affected. In addition, the state societies have found that they could be helpful on such matters as the classification of engineering positions under civil service and in seeking better pay rates for such positions.

On a national scale, corresponding subjects have provided only a limited number of interesting projects for society action. Most of the promising leads proved to be dead ends.

Now, however, the NSPE appears to be on a track that leads to real opportunities for service. If, as the new report states, only 40 percent of the potential managerial talent of engineers employed by industries in this country is being used effectively, a fruitful field for research and study lies ahead. We surmise that the report points not only to the need for better means of communication between top management and its engineers but also to the need for more articulateness on the part of engineers all down the line.

If NSPE finds that it can render useful service in this type of work it will have prepared the ground for allied types of work. Only the surface has been scratched in the field of in-service training for young men in all types of engineering work. Some of the state societies have begun sponsoring such training programs, and at the present time the Engineers Council for Professional Development is planning to start training courses in one or two cities for exploratory purposes. Its programs must have the active support of state societies of professional engineers as it expands.

Developing training programs that would help to correct the deficiencies revealed by this NSPE report on engineer-management relations should not be difficult because many of the larger industrial corporations are experienced in operating employee-training programs. But meeting the training needs of the greater number of young engineers employed by smaller industries, in public service or the offices of consulting engineers, is a more difficult problem. It is here that NSPE, as the coordinating agency for the state societies of professional engineers, can be most helpful in making the ECPD training program most effective.

Keeping brick in the running

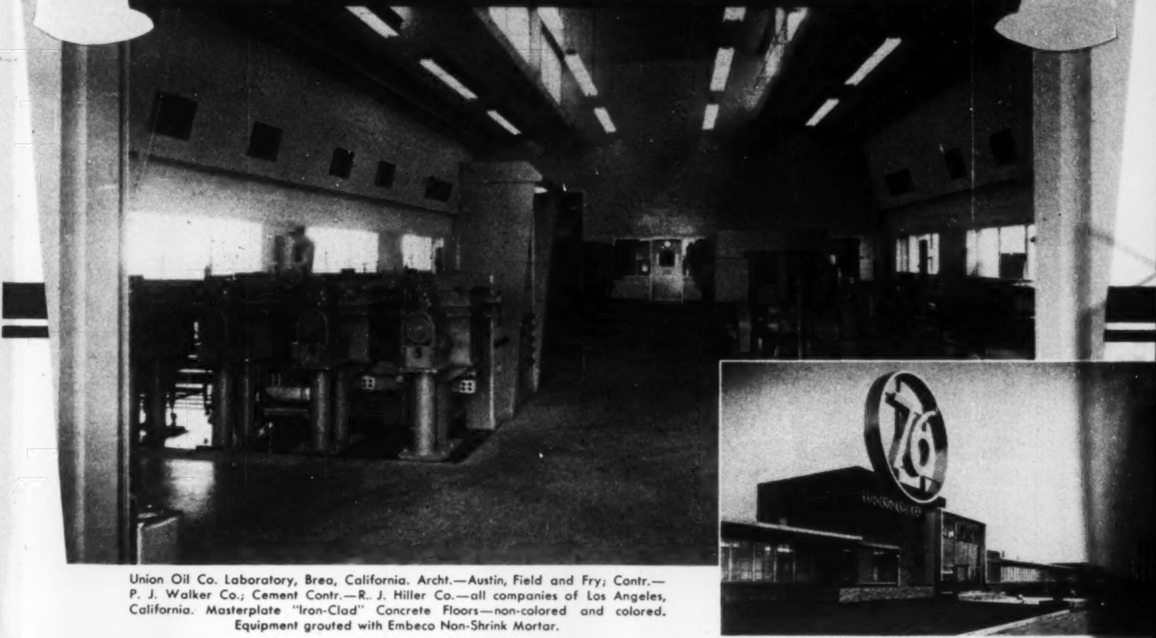
A NEW BRICK that promises economies in brick-wall construction is now being demonstrated in the larger cities (ENR May 1, p 130). It is wider than the standard brick—5½ instead of 4 inches—thus making possible the construction of a 5½-in. thick wall, which is adequate structurally for many purposes. Also it is longer; a length of 11½ in. gives it a modular character eliminating much of the necessity for cutting bricks on the job. In thickness it is similar to standard brick. Vertical holes reduce weight and facilitate handling, as the holes provide a grip at the same finger spread that masons use in laying 4-in. brick.

Rising labor costs have been placing brick construction at a greater and greater disadvantage as years passed because of the high percentage of labor per unit of brick wall as compared to other materials. Within the last few years, development of large panels of sandwich construction having insulating and appearance values on a par with brick have sharpened competition. That caused the Structural Clay Products Research Foundation to seek ways to cut the cost of brick and terra-cotta wall construction. Last year it announced a new type of insulated cavity wall. The new type of brick now being introduced is the second development. Others, including a clay-tile partition panel, are reported to be coming out of the laboratory soon.

How successful this new brick will be in recapturing old markets or developing new ones remains to be seen. The structural clay products industry sees a bright future for it in house construction, where brick always has been popular due to its durability, great flexibility in arrangement, high structural and fireproof characteristics and attractive appearance.

For architects and engineers the importance of this new brick goes beyond anticipated savings in bricklaying costs. It lies in the opportunity the brick will give them to explore its possibilities as a wall material that may provide economical forms that were not possible with bricks of standard dimensions.

Ductile, Long-Life Floors and Equipment Grout In Union Oil Company Laboratory



Union Oil Co. Laboratory, Brea, California. Archt.—Austin, Field and Fry; Contr.—P. J. Walker Co.; Cement Contr.—R. J. Hiller Co.—all companies of Los Angeles, California. Masterplate "Iron-Clad" Concrete Floors—non-colored and colored. Equipment grouted with Embeco Non-Shrink Mortar.

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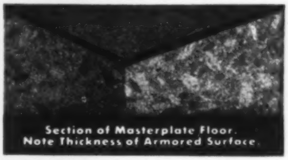

Section of Masterplate Floor. Note Thickness of Armored Surface.

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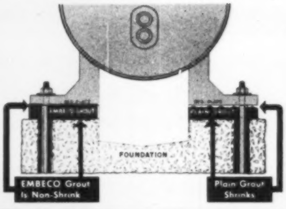

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Dualizing a New Jersey highway

with Texaco Asphaltic Concrete

Laying heavy-duty Texaco Asphaltic Concrete pavement on first section of New Jersey Route 43 (White Horse Pike) to be dualized. Old highway at left will be used by eastbound traffic exclusively; new pavement will serve westbound vehicles. Contractor, the Union Paving Company of Philadelphia.

Faithfully yours
50
for Fifty Years

State Highway 43, known as the White Horse Pike, is the most heavily traveled route across southern New Jersey. Last year, the State took the first step toward dualizing this highway, an improvement which means reduced travel time and increased safety for motorists. A new Texaco Asphaltic Concrete pavement was constructed parallel to the old highway between Egg Harbor City and Ellwood, a distance of five miles. Westbound traffic now uses the new pavement, while eastbound traffic has exclusive use of the old road.

Flexible-type construction was used throughout on the new section of the White Horse Pike. The resilient, heavy-duty Texaco Asphaltic Concrete wearing surface was laid in two courses, each 1½ inches thick, over a 4-inch waterbound macadam foundation. Underneath this is a gravel sub-base approximately 12 inches thick. The result is a pavement well able to withstand the continuous stream of traffic, including many trucks, which uses this highway. Free of joints, immune to ice control chemicals and with low susceptibility to temperature changes, this type of construction calls for a minimum of maintenance.

For turnpikes, important city streets, main highways and major airports, the flexible design employed by New Jersey on the White Horse Pike merits the serious consideration of engineers.

Two helpful booklets on all types of Asphalt road and street construction can be obtained without charge or obligation by writing our nearest office.

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